TECHNOLOGY DEPT.

TELEPHONE and Management ENGINEER

JULY
1954

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THE
NATIONAL
TELEPHONE
MAGAZINE

FEATURING IN THIS ISSUE—

★ Blueprint For A Traffic Force, by Ruth Richards
★ Reducing Accident Costs Through Safety Committees
★ Top Management Reports, by L. F. Shepherd & H. W. Wagner
★ Editorial — "The Care and Feeding of Stockholders"

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Our satisfied customers include over 225 Independent and Bell Telephone Companies for whom we sell **TELEPHONE DIRECTORY ADVERTISING EXCLUSIVELY** in more than 5200 cities and towns in 29 states.

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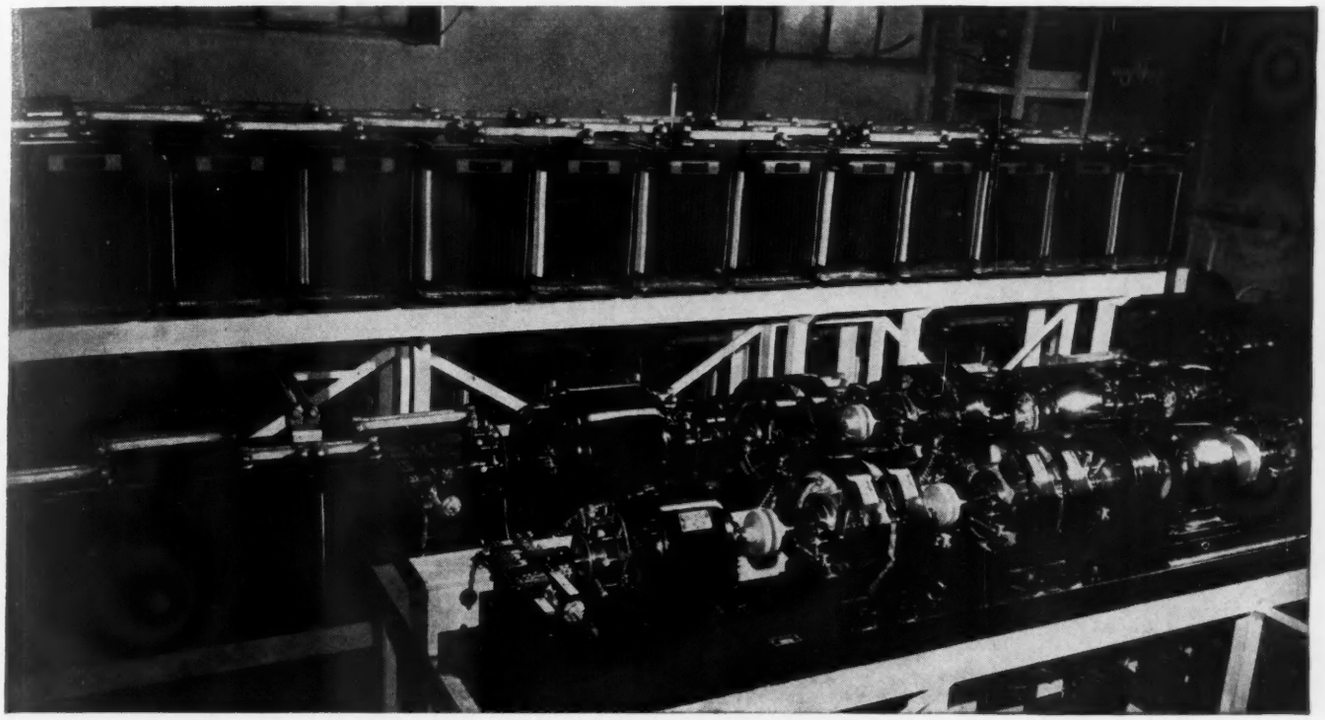
says Peoples Telephone Corp., users of Exide batteries for continuous float operation



THIS POWER ROOM incorporates the latest developments to insure continuity of service—under present load conditions and for future growth. Power is assured by the 46 cell Type FOE-29 Exide-Tytex battery rated at 1120 ampere hours. Charging and loading equipment consists of three diverter pole generators automatically cut in or out to meet load requirements. Exide C.E.M.F. cells allow for proper charging of the battery.

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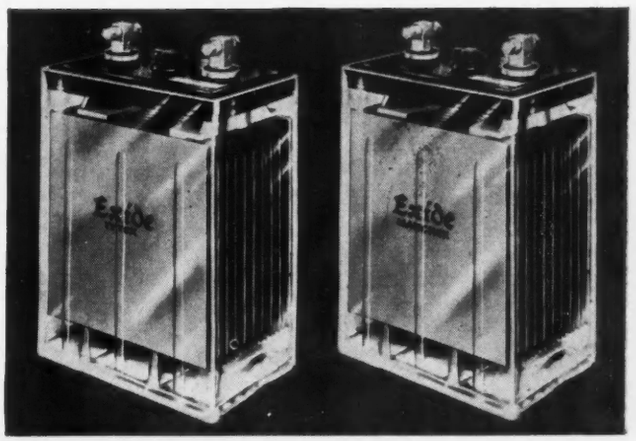

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Officers & directors, Wisconsin State Tel. Assoc. (See "Cover Story" on page 20).

The National Telephone Magazine

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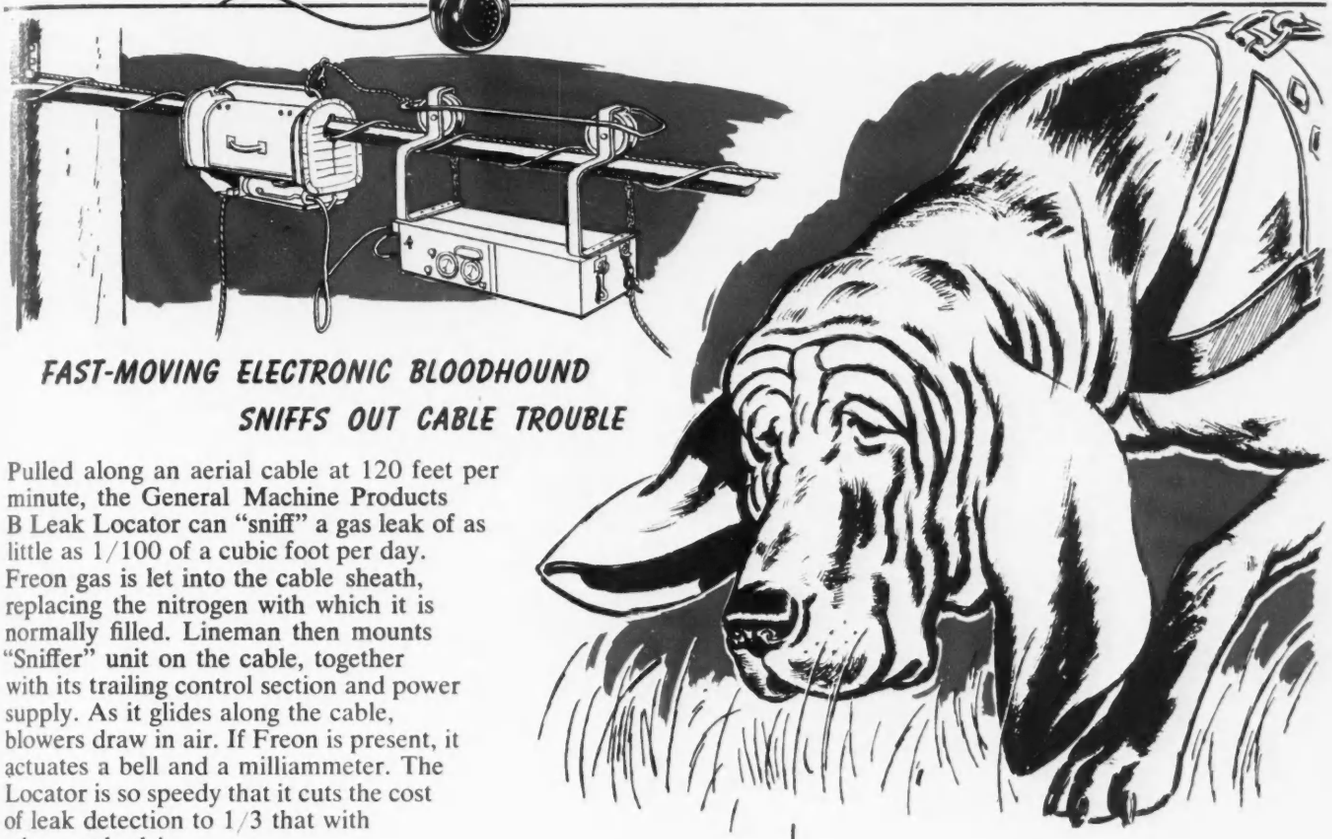
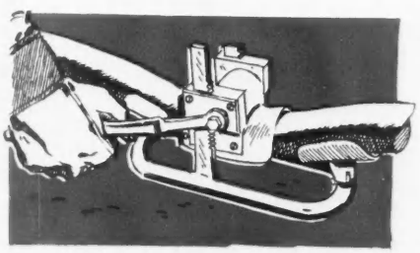
GraybaR TELEPHONE NEWS



FAST-MOVING ELECTRONIC BLOODHOUND SNIFFS OUT CABLE TROUBLE

Pulled along an aerial cable at 120 feet per minute, the General Machine Products B Leak Locator can "sniff" a gas leak of as little as 1/100 of a cubic foot per day. Freon gas is let into the cable sheath, replacing the nitrogen with which it is normally filled. Lineman then mounts "Sniffer" unit on the cable, together with its trailing control section and power supply. As it glides along the cable, blowers draw in air. If Freon is present, it actuates a bell and a milliammeter. The Locator is so speedy that it cuts the cost of leak detection to 1/3 that with other methods!



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Graybar distributes the complete line of GMPCO tools and accessories needed for fast efficient cable work – mandrels, duct cleaners, pickups, grapples, and feeders. But one of the biggest time savers is this GMPCO cable bender. Easy to use in restricted manholes, it makes compound bends in lead cable up to 3" without damage . . . multiplies 100 lbs. of handle pressure 20 times.

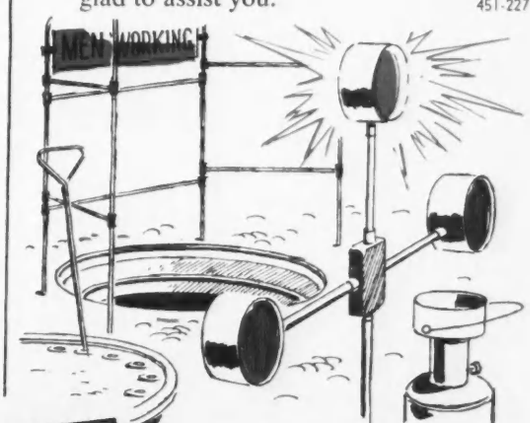
IT TAKES LESS "BEEF" WITH GREASE

Cables slide into conduits a lot more easily when they have been given a coat of GMPCO cable lubricant. The lubricant is available in 5-gallon cans in two types, one for lead-sheathed cable, the other for plastic-jacketed cables.

SAFETY FLASH

Minimize the hazard of open manholes with this GMPCO flashing signal and stand. Powered by a portable storage battery, this sturdy signal flashes a constant impossible-to-miss warning to pedestrians and vehicular traffic. For prices and information on this and any other telephone needs, call your local Graybar Representative – he will be glad to assist you.

451-227



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Executive Offices:
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IN OVER 110 PRINCIPAL CITIES

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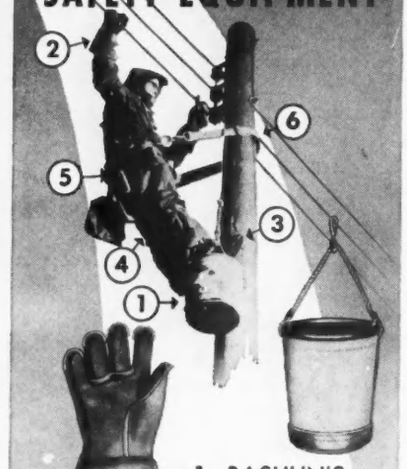

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WRITE TODAY for this CATALOG

W. M. BASHLIN CO.
GROVE CITY, PA.

—mostly about people

Across The Editor's Desk

West Coast Trip

PERSONAL THOUGHTS while attending the *West Coast Conventions*: As this is written the memories of the conventions of the *California* and the *Oregon-Washington Telephone Associations* are yet fresh.

We were proud to be present at the California annual convention which honored *Charles F. Mason* who finished 20 years as its president . . . *Edwin M. Blakeslee*, president of the *General Telephone Co. of California*, on behalf of the association presented Mr. Mason a plaque of appreciation from the membership. Unfortunately Mr. Mason was ill and unable to be in attendance to receive the honor in person . . . His message to the membership requested them not to draft him again as its president.

Mark R. Sullivan, president of the *Pacific Tel. & Tel. Co.*, was host to a group of Independent telephone men and a number of his associates at a luncheon held at his club directly across from the Hotel Fairmont, convention headquarters. We were honored to be present and have the chance to greet *Francis Crosby* and *Ned Powley*, now retired, and other old friends. Our friend *Chester Loveland* of the *California Water & Telephone Co.* was seated next to this writer and we wish to thank him for briefing us on the telephone business in California.

A number of Eastern and Midwestern visitors to the California meeting remained on the West Coast to enable them to attend the Oregon-Washington convention the following week. *Foster McHenry* of the *Capital City Telephone Co., Jefferson City, Mo.* and the writer enjoyed this interim and were guests on a trip to Lake Shasta and a salmon fishing expedition on the Pacific. Again we thank Mr. Loveland and several of his associates for the experience of being on a deep-sea fishing trip where fish were really caught. A limit catch of salmon rewarded the 12 intrepid telephone men who rose with the sun and made the 7 o'clock a.m. deadline. Other visitors golfed or visited friends.

Warren Clay, Hutchinson, Minn., president of the United States Independent Telephone Association, was a featured speaker at both conventions. He also won the pot for the largest salmon hooked and landed—in fact he caught the two largest—on his first deep-sea fishing experience. *Mr. and Mrs. Frank Davies* visited their daughter and grandchild in southern California between conventions.

We were surprised at the unusually large attendance at both of these meetings. *Messrs. Gritten and Baker*, secretaries of the Oregon and Washington associations respectively, fulfilled all promises to us on the attendance of their joint meeting in Portland, Ore.

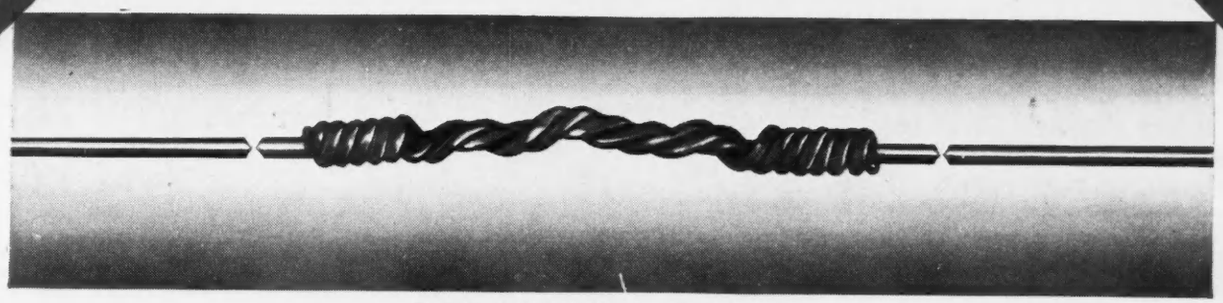
It was nice to see the *Ray Daltons* and meet their son; to again see the *Wade Deans* and deliver a picture to her that we took at the Colorado Springs meeting; to enjoy and be with the *Joe Galligans* of San Francisco who had us as their house guest, later traveling with us to Portland. The programs were excellent and were real eye openers to this writer who does not get to attend the West Coast conventions regularly.

Meet The Van Zandt's

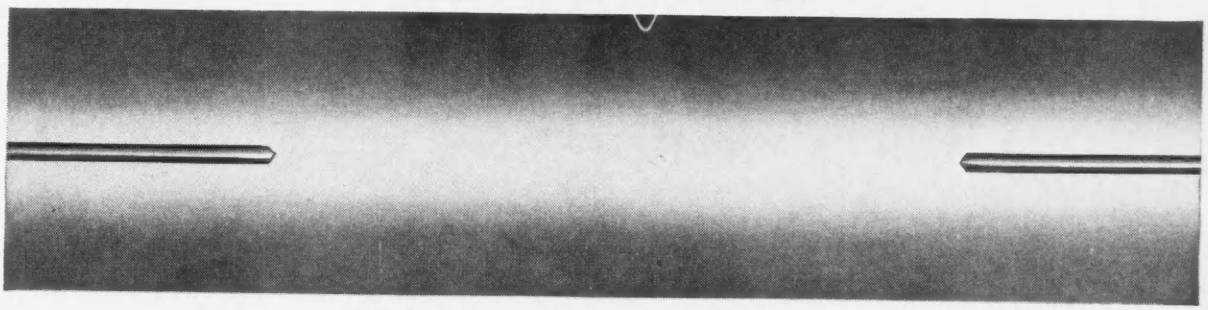
MOST OF THE Independent telephone people have heard *Howard Van Zandt* of the *Kellogg Switchboard and Supply Co.* speak on his experiences in Japan. He has appeared on almost all of the various association programs since World War II. We will bet you did not know that *Mrs. Van Zandt* is very much in demand all over the United States as a speaker on the same subject. Yes sir, through mutual friends from Oklahoma City, we unearthed the secret that Mrs. Van Zandt has possibly spoken to more people on Japan than her illustrious husband. Both of the Van Zandts are very modest about this hobby of theirs.

Nicopress
REPAIR SLEEVES

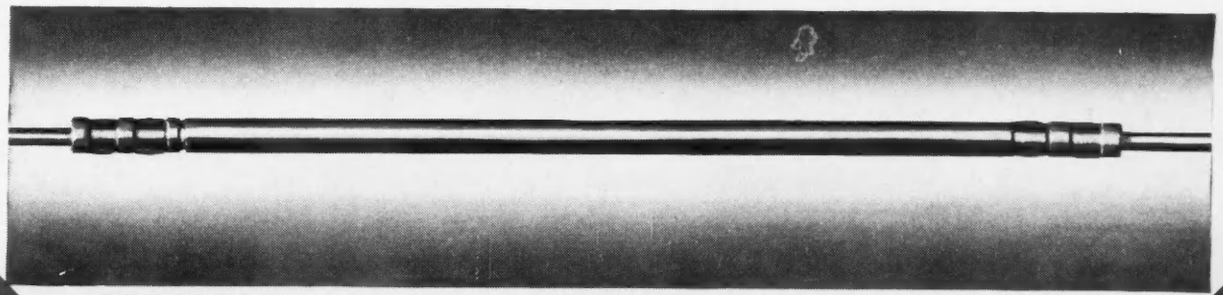
eliminate the need of using a section of wire and two sleeves when old defective splices are being replaced.



DEFECTIVE SPLICE



READY FOR NICOPRESS



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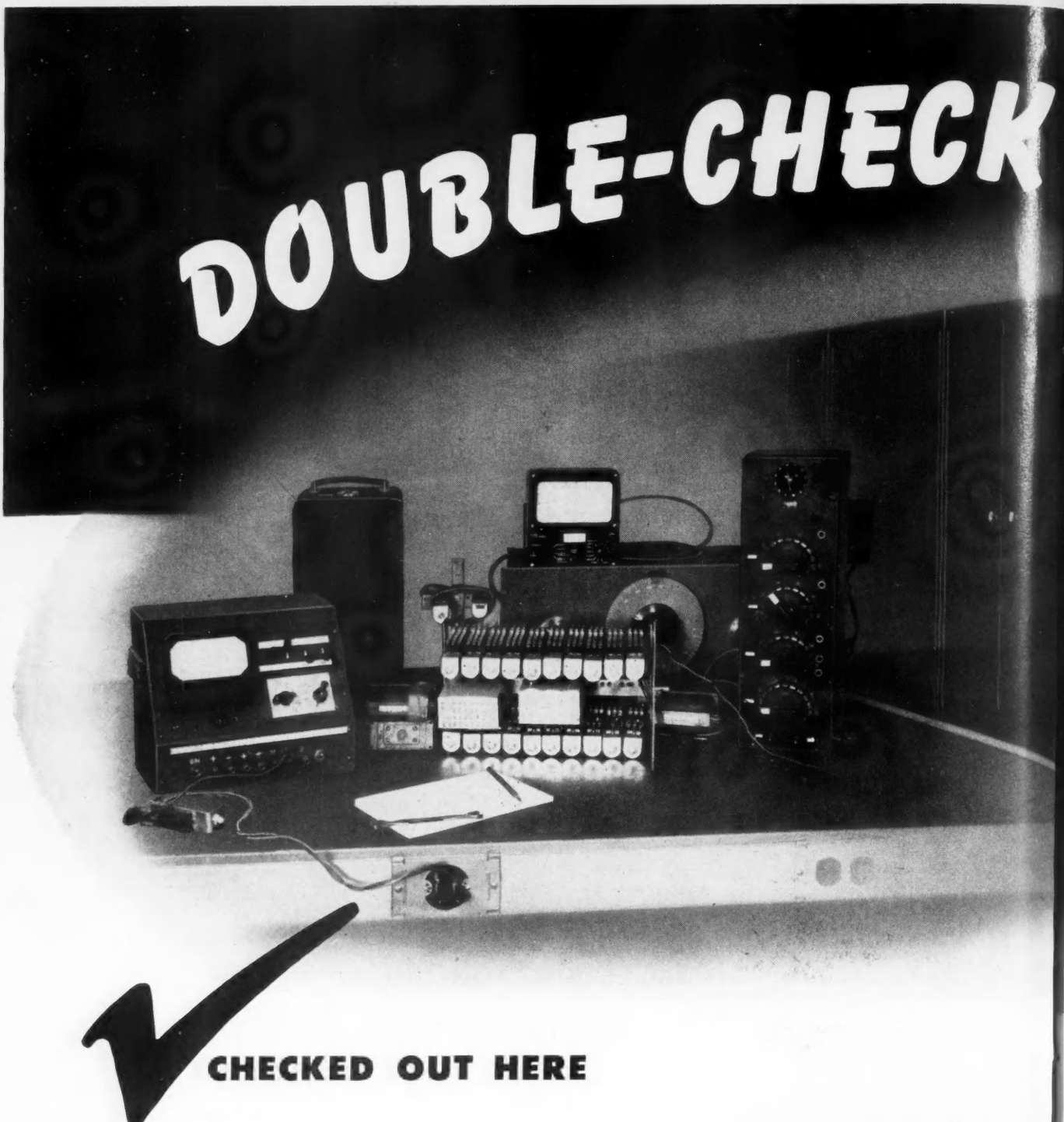


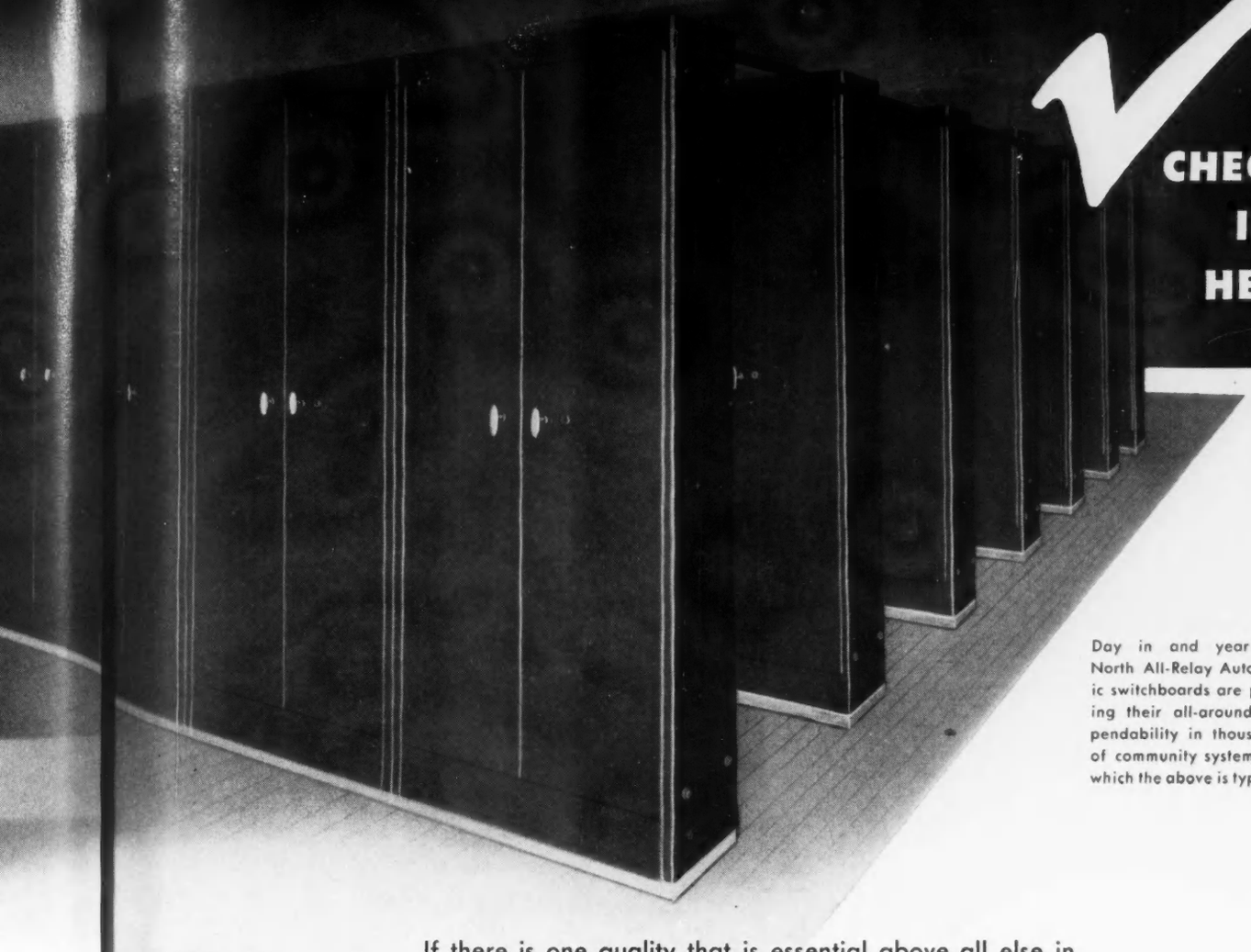
CHECKED OUT HERE

How many millions of times will North relays operate dependably without attention? In tests like the one above, on relays taken from regular production lines, it has been proved they will consistently make as many as 300,000,000 consecutive contacts without trouble.

NORTH

NORTH

k on Dependability



Day in and year out North All-Relay Automatic switchboards are proving their all-around dependability in thousands of community systems, of which the above is typical.

If there is one quality that is essential above all else in automatic telephone equipment it is dependability. The all-around dependability of North All-Relay for serving subscribers with profit to telephone stockholders has been checked and double-checked through more than a half-century of development, scientific testing and on-the-job proof. We would like to have you double-check North owners and North field engineers on the facts behind the dependability of

TH *All-Relay* AUTOMATIC EXCHANGES

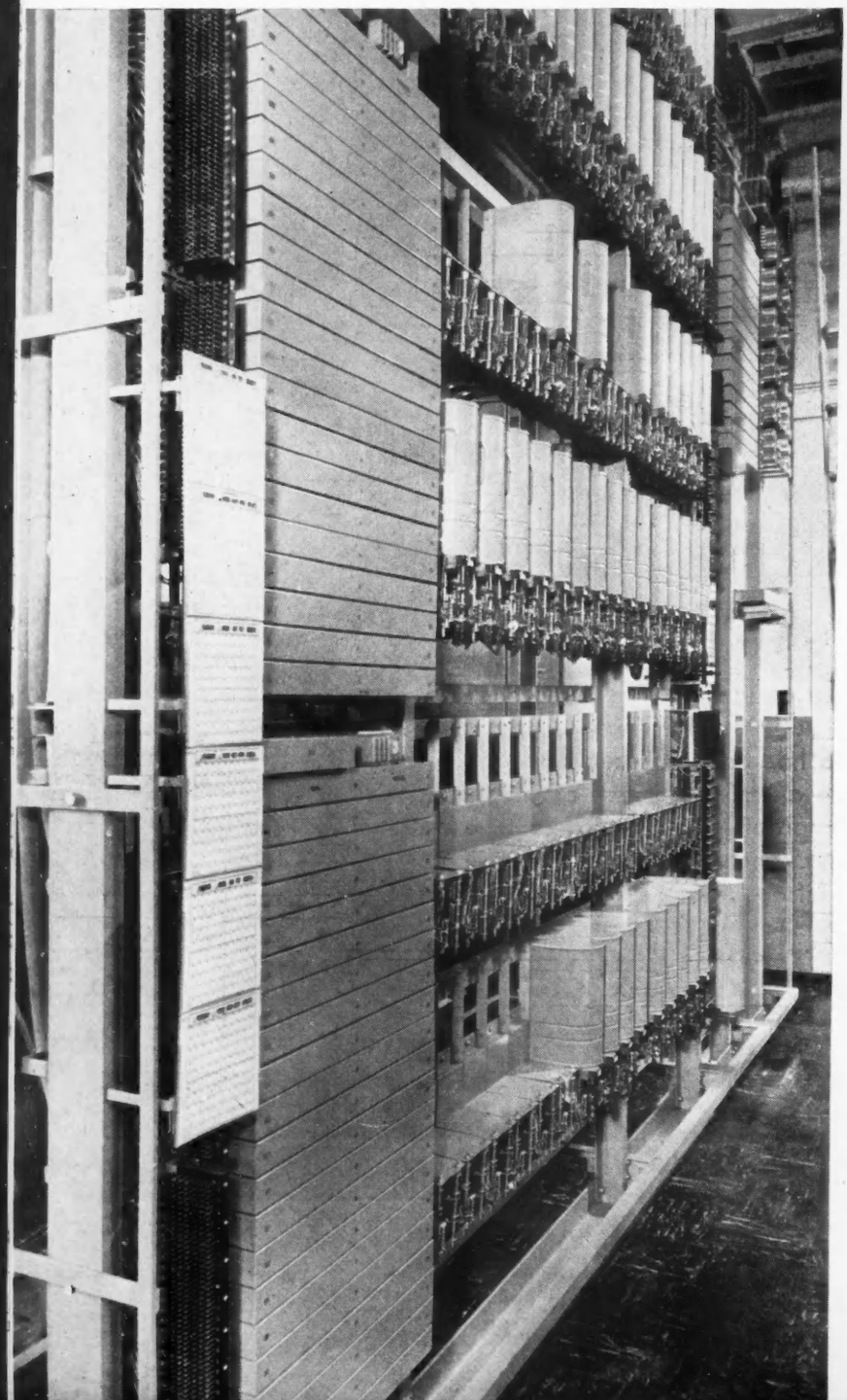
THE NORTH ELECTRIC MANUFACTURING COMPANY

Originators of **ALL RELAY** *Systems of Automatic Switching*

655 South Market Street, Galion, Ohio, U.S.A.

These Savings are Yours

with FEDERAL STEP-BY-STEP *Dial Switching Equipment*



FEDERAL'S
Finder Allotter System
Gives You More
with Much Less Effort!

MINIMUM MOTION

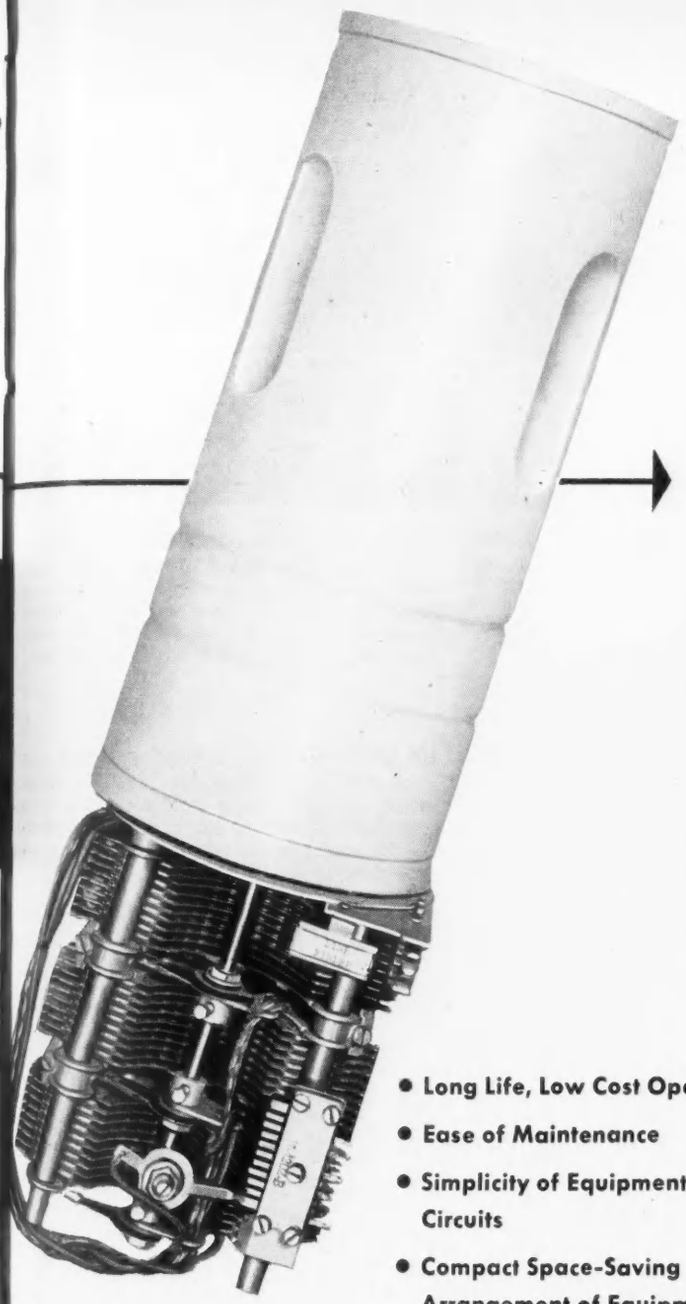
In the Federal Step-by-Step allotter system, motion of the 200 Point Line Finder Switch is reduced almost 20% over switches of other systems. The Finder requires minimum operation for selection of the line originating the call.

SIMULTANEOUS OPERATION

200 Point Line Finder Switches can operate simultaneously to handle all traffic demands whereas in ordinary allotter systems only one finder can be in operation in any one instant.

DELIVERY MAXIMUM SERVICE

A failure in the ordinary sequence allotter system immediately denies service to all of the lines it controls. In the Federal Step-by-Step system, a failure of the allotter system would deny service to only ten lines and all other lines would continue to be serviced without delay.



VACATION NOTICE

Kellogg's general vacation period will extend from July 19 through Sunday, August 1, 1954. Review your requirements and order now for prompt delivery.

For sizeable savings . . .

for durable dependability . . . Federal Step-by-Step is the logical choice of dial central offices of any size, or larger private automatic branch exchanges. Compact, rugged Step-by-Step offers outstanding performance combined with flexibility in arrangement of facilities to meet variable service needs. Base your decision on the facts—write today for Step-by-Step Bulletin on Community and City Exchange Services.

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- **Ease of Maintenance**
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- **Compact Space-Saving Arrangement of Equipment**
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- **Ready, Low-Cost Expandability for Increased Station and Traffic Requirements**

- **STEP-BY-STEP EQUIPMENT MEANS HIGH SERVICE STANDARDS**
- **MEETS GROWTH REQUIREMENTS QUICKLY AND EASILY**
- **ECONOMICAL—DEPENDABLE**
- **EACH SWITCH A SEPARATE UNIT—EASY TO CHECK AND ADJUST**
- **STEP-BY-STEP CIRCUITS ARE SIMPLE —EASY TO UNDERSTAND**
- **EFFICIENT FOR ALL SIZES AND TYPES OF SERVICE**
- **MEETS INTERTOLL DIALING REQUIREMENTS**

Sold and Guaranteed by

KELLOGG DIVISION OF IT&T

KELLOGG SWITCHBOARD AND SUPPLY COMPANY

A Division of International Telephone and Telegraph Corporation

79 W. Monroe Street, Chicago 3, Illinois

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79 W. Monroe St., Chicago 3, Illinois

Please send full information covering Federal STEP-BY-STEP EQUIPMENT.

NAME_____

COMPANY_____

STREET_____

CITY_____ ZONE_____ STATE_____

These Double-Faced Signs are made of long-life porcelain enamel fused to heavy gauge steel. Clear visibility and permanent colors are features of signs made by INGRAM-RICHARDSON MANUFACTURING CO. With either plain or activated surface.

Save Three Ways . . . on materials, man-hours, and maintenance with INDIANA STEEL & WIRE CO.'s Crapo HTL-85 and HTL-135 Line Wire. Galvanized by the famous Crapo Galvanizing Process, protected with heavy, ductile coating of zinc.

The Expanding Plates and Spreader Arms of Everstick Anchors insure 100% safety and maximum holding power under excessive strain. Ribbed base plate allows anchor to be locked solidly on rod. Quickly installed. Made by EVERSTICK ANCHOR CO.

A Tree Guard made of thermoplastic tubing, helically slit, and cut to three foot lengths —protects drop wire from abrasion where tree contacts are unavoidable. Guard can be spiraled on wire already in place. Made by DETROIT MACOID CORPORATION.

Power Cross Protection is now "ganged up" with the new Cook 5 Circuit Power Cross Protector. It provides a single assembly for 5 circuits to be mounted on a 10-pin arm requiring only a single ground wire. Made by COOK ELECTRIC COMPANY.

The Key to Clear Party Lines. The Signal tone produced by the LORAIN HOWLER demands attention; it is loud yet safe — the ideal method for getting that misplaced receiver on the hook without making a service call. LORAIN PRODUCTS CORP.

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Signal tone OWLER de- safe — the isplaced re- king a ser- S CORP.

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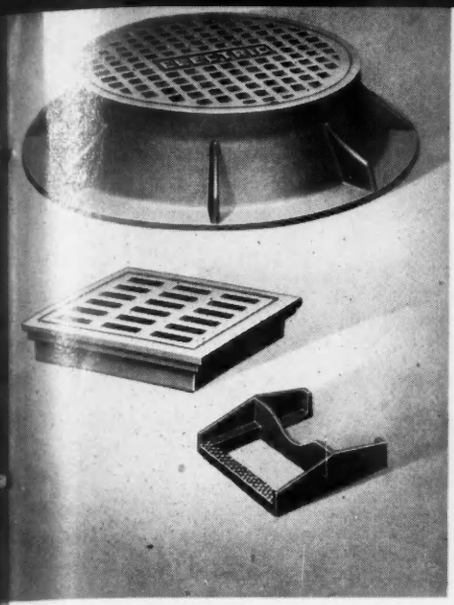

Complete Line of Construction Castings for Underground Electric or Telephone Service. Shown are manhole frame and cover; sump and catch basin frame and grate; and cast iron manhole steps. For service and quality use NEENAH FOUNDRY CO. products.

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Time Proven—for 60 years Exide Batteries have been serving telephony! The Manchester positive plate with its button type construction provides long life . . use Exide Manchex for all your battery requirements. ELECTRIC STORAGE BATTERY CO.

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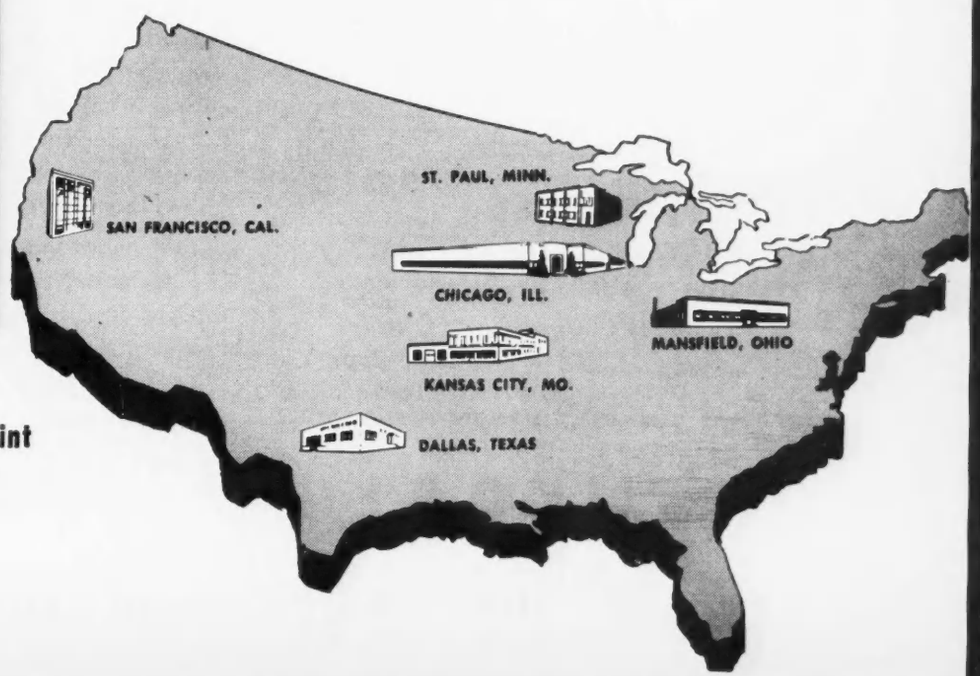
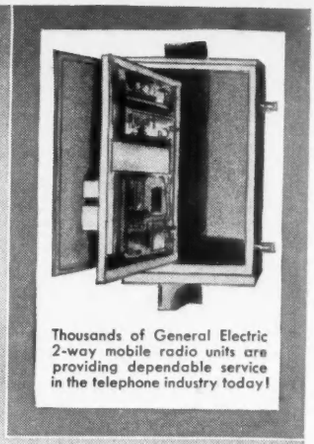
You will save time and shipping costs and get guaranteed quality when you make Kellogg your only source for Line Supplies. Delivery service is fast—Kellogg has 6 conveniently located warehouses and more than 100 supplier distribution points throughout the country. Your order is shipped from the location nearest you.



Your Nearest Kellogg Shipping Point Is Never Far Away!

G-E 2-way radio serves subscribers where wire lines could not reach



Thousands of General Electric 2-way mobile radio units are providing dependable service in the telephone industry today!

Expensive wire line construction eliminated!

HERE'S HOW the Crane Lake Telephone Company provides complete area facilities at low construction cost. They installed G-E 2-way radio equipment.

One base station and directive antennas were set up at Handberg's Indian Trading Post on Lac la Croix, Canada. Another G-E station unit was located 23 miles away at the Crane Lake exchange. Today, Jay Handberg's call travels across the Canada-U.S. border via the G-E radio route to Crane Lake. There, operator Carla Hansen connects him with his brother who is attending school in the U.S. This unique installation has meant communication for the very first time, regardless of weather or season. Since the original link was made, other subscribers in the area have joined this General Electric network.

Take a second look at your service expansion plans! G-E communications will solve many problems for you too! Get detailed information today. Write: *General Electric Company, Section X8974-15, Electronics Park, Syracuse, N. Y.*

2-WAY MOBILE RADIO

SELECTIVITY GUARANTEED FOR LIFE!

PROGRESS IS OUR MOST IMPORTANT PRODUCT

GENERAL ELECTRIC

NEWSLETTER
TELEPHONE ENGINEER

Fortnightly TELEPHONE ENGINEER ★ TELEPHONE ENGINEER AND *Management*
ON THE 1st OF EACH MONTH ON THE 15th OF EACH MONTH

Dear Sir: July 15, 1954

FRANKLIN SMITH HEADS PENNSYLVANIA INDEPENDENTS:—Franklin Smith of the Blakeslee & Fern Ridge Tel. Co. was elected pres. of Pennsylvania Independent Telephone Association at its annual meeting. Other officers elected are: K. B. Schotte of the Kittanning Tel. Co. and H. Y. Smith of the Columbia Tel. Co., vice presidents; G. B. Rudy, Jr., of York Tel. & Tel. Co., treas.; and A. C. Herbert, executive vice pres.

Mr. Herbert, in his report to the convention, pointed out that Independent companies added 36,400 stations in Pennsylvania in 1953 to bring total to 567,000, a 115% increase since end of World War II. Last year, Independent companies spent $18,000,000 on construction, to increase total net plant investment to $120,000,000. Expenditures of another $18,000,000 are planned for this year.

W. G. WINTERS ELECTED PRES. OF TEXAS TELEPHONE ASSOC.:— W. G. Winters, pres. of Hull Tel. Co., Houston, Tex., has been named pres. of the Texas Telephone Association for 1954-55. Other officers elected are: Don Hunsaker, vice pres. of General Tel. Co. of Southwest, first vice pres.; D. G. Gardner, Jr., general manager, Nocona (Tex.) Tel. Co., second vice pres.; Pam Grinstead, Kerrville (Tex.) Tel. Co., treas. J. B. Haley is executive vice president.

REA PHONE LOANS APPROVED IN MISSOURI, MONTANA, ILLINOIS, KANSAS:—$2,910,000 loan to Grand River Mutual Tel. Corp. of Princeton, Mo., which earlier had received 2 loans totaling $1,856,000, was approved last month by Rural Electrification Adminstration (REA).

With REA funds, company will construct modern telephone system that will serve 10,154 subscribers, including 2517 now without telephones. Latest grant will enable Grand River firm to acquire 4 Independent companies — Eagleville, Ravanna, Chula, & Terry telephone companies — & rehabilitate & extend service in communities they serve. Under present plans, Grand River system will operate 2986 miles of line.

At same time, REA approved loan of $725,000 for Three Rivers Rural Tel. Cooperative, Inc., Fairfield, Mont., to improve & extend rural telephone service in 4 counties. Loan funds will be used to provide modern facilities for 1169 subscribers, including service for 1st time to 848 rural families and establishments in west central Montana. Borrower plans to acquire small Independent companies or exchanges & 6 miles of toll lines.

Port Byron (Ill.) Tel. Co. was granted 2nd loan of $145,000 to finance construction of 14 miles of line & other facilities to serve 133 subscribers not provided for in 1st loan of $172,000 approved in June, 1952. Two loans will enable company to bring service to 988 subscribers over 34 miles of line.

Also, REA approved loan of $199,000 to Burdett (Kans.) Tel. Co., an established company but new REA borrower, which is now serving 200 subscrib-

ers. With loan funds will convert to dial operation, add 38 new subscribers, & rebuild most of its line. When project is complete, Burdette company will be serving 328 subscribers over 182 miles of line in 4 counties.

EXPANSIONS & IMPROVEMENTS:—Union Tel. Co. plans dial installation at Fontanelle, Iowa . . . Kiron (Ia.) Tel. Co. will convert to dial in 1955 . . . General Tel. Co. of Ill. will install dial equipment at Vienna, Ill. . . .Wright (Minn.) Tel Co. completed $45,000 improvement project . . . Stockholders of Citizens Mutual Tel. Co. approved plan for dial installation at Floyd, Va. . . . Paul Grauer, mgr., Wilson (Kans.) Tel. Co. announced completion of dial conversion project . . .

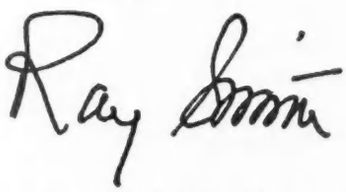
REA MAKES $525,000 LOAN ALLOCATION TO WISCONSIN COOPERATIVE:—A $525,000 REA loan to Vernon Tel. Cooperative, Westby, Wisc., will be used partly to finance purchase of 5 small Independent companies in Vernon and Crawford counties which now serve total of 313 subscribers over 198 miles of line, it was reported last month. With REA funds, new co-op will serve 866 subscribers, rebuild 188 miles of existing line, & add another 177 miles. 3 dial central offices will be constructed.

Second loan, of $128,000, to Runestone Tel. Assoc., Barrett, Minn., will be used to furnish service to 133 existing & 117 new subscribers in area adjacent to present operating area. With funds from its 1st loan of $362,000, company is providing service for 828 subscribers. Entire system under both loans will consist of 315 miles of line.

Pioneer Tel. Cooperative, Kingfisher, Okla., was granted $342,000 to help finance acquisition of 4 small exchanges which will serve as nucleus for building & expansion program to bring improved service to 304 subscribers of the 4 exchanges and initial service to another 391 rural families. Co-op will construct 333 miles of new line & convert the 4 central offices to dial.

Project Mutual Tel. Co., Rupert, Ida., was allocated $761,000 to modernize facilities & expand service from 1500 to total of 2460 subscribers in Minidoka & Cassia Counties; West Jersey Tel. Co., Belvidere, N. J., was allocated $289,000 in addition to earlier grant of $943,000, to expand facilities to serve 1622 new subscribers, raising total service figure to 3146 customers in Warren County; Brazos Tel. Cooperative, Olney, Tex., was allocated $116,000 in addition to earlier grant of $467,000, to expand service from 315 present subscribers of the co-op to total of more than 1100 subscribers in Young, Throckmorton, Shackelford & Stephens Counties.

EXPANSIONS & IMPROVEMENTS:—A. G. Ulrich, gen. mgr., Mississippi Valley Tel. Co., has announced plans to convert Hamilton, Ill., exchange to common battery operation . . . Manila (Ia.) Tel. Co. recently held "Open House" to show its new dial equipment to subscribers. Cutover was completed Feb. 18 at cost of $65,000 . . . Foster Laming, owner of Suburban Tel. Co., Tonganoxie, Kans. announced plans for converting Tonganoxie and Bashehor to dial operation.



Ray W. Smith, Editor

SURE...

High Strength Is Important

BUT...

You Also Need
Good Voice Transmission
And Permanent Rust Protection

ONLY

Copperweld TRADE MARK **LINE WIRE**

MEETS ALL THESE REQUIREMENTS

By using Copperweld* Line Wire for your overhead lines, you lower operating costs, you gain dependable performance and you improve customer relations.

With Copperweld, voice and high frequency transmission properties are excellent—far better than with any other high-strength conductor. You get the rust resistance and long life of copper plus two to three times its tensile strength. And because Copperweld's copper-protected steel core provides permanent strength, you can safely string longer spans with substantial savings in initial construction and yearly maintenance.

For all types of communication and signal lines, including carrier current circuits, only Copperweld Line Wire gives you the combination of permanently better conductance, safer long spans and long rust-resisting life at lowest annual cost. Write us today for complete engineering data.

*Trade Mark

COPPERWELD STEEL COMPANY
Glassport, Pa.
SALES OFFICES IN PRINCIPAL CITIES

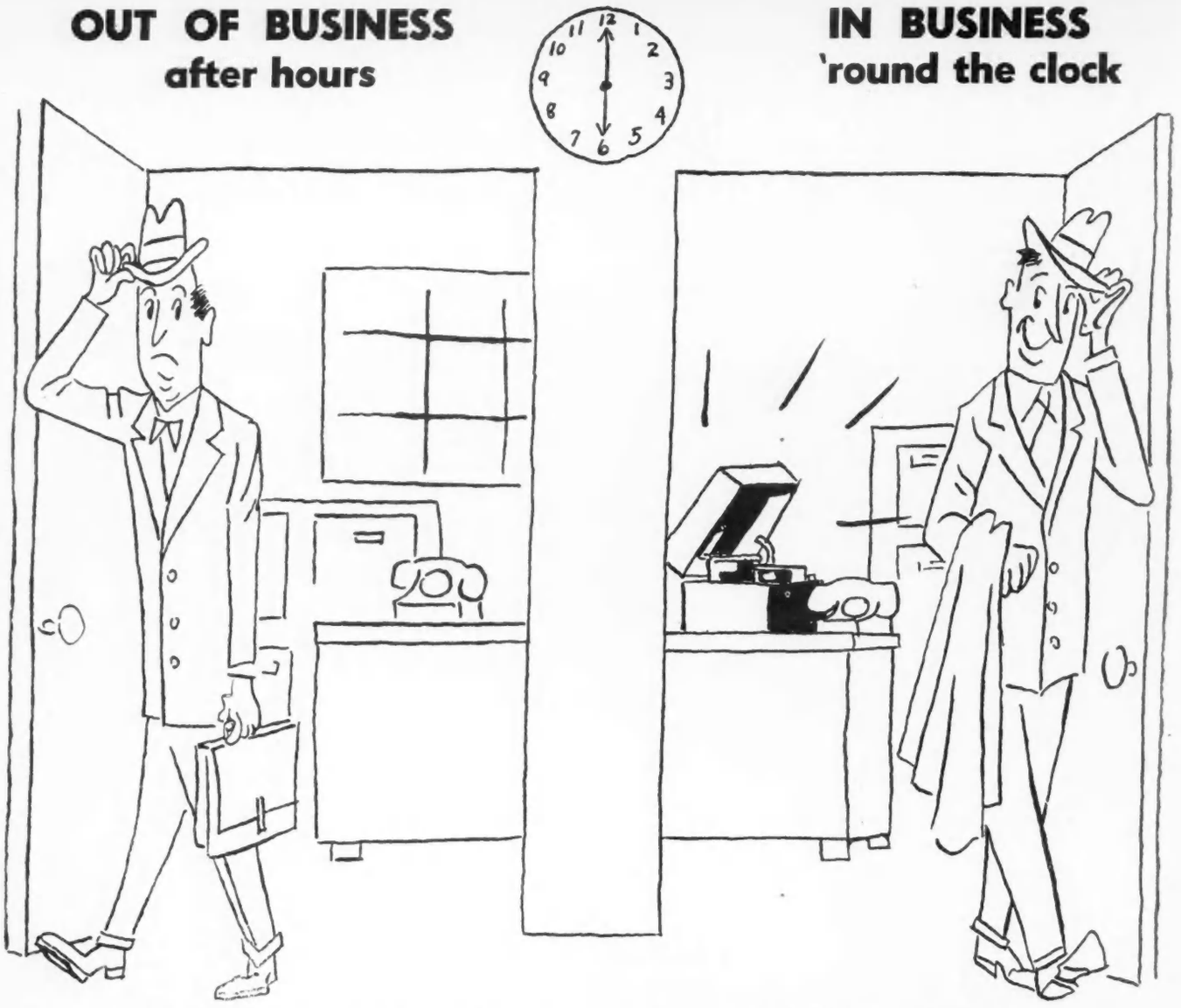
Copperweld TRADE MARK STRONG, NON-RUSTING Line Wire

Costs Less BECAUSE IT Lasts Longer

SOLD BY LEADING DISTRIBUTORS

OUT OF BUSINESS
after hours

IN BUSINESS
'round the clock



If Joe Jones could see around the door into his competitor's office, he'd know why his own business was on the short side these days. Like thousands of other small businesses, these two salesmen depend on their telephone to bring in new customers — and when Joe Jones shuts his door, he's temporarily out of business.

Joe's competitor, on the other hand, depends on his Peatrophone to keep him in business whenever he is away from the office. Should a prospective customer call, the Peatrophone will answer by giving out a personally recorded message telling when he will return, or where he can be reached. It will then ask for, and record, any message the caller wishes to leave.

When Mr. Competitor returns to his office, he has no worries about lost business. The Peatrophone has a complete record of calls, and he can play back the messages through his telephone.

How many of your subscribers in sales and professional offices, in retail and service businesses, are like Joe Jones — out of business when they shut the door? Don't keep them in the dark! Tell them about Peatrophone — explain its low monthly rental charge. You will help improve their business and at the same time provide your own company with a steady new source of revenue.

Note: Selective harmonic ringing subsets now available — all frequencies. Write for further information.

PEATROPHONE

The Mechanical Secretary

TELEPHONE ANSWERING & RECORDING CORP.
342 Madison Ave. New York 17, N. Y.

In any **MODERN** switchboard installation—

Photo courtesy of Stromberg-Carlson

the choice is **ACCURATE AUTOMATIC TOLL TIME CALCULATING AND RECORDING**

by **CALCULAGRAPH**

Because they quickly save many times their initial cost, **CALCULAGRAPH** permanent printed records eliminate switchboard detail work, speed service. Accuracy-to-the-second permits collection of all the revenue due on every call. **CALCULAGRAPHS** are precision instruments featuring high visibility dials, smooth silent lever action. Available in several models, they can be engineered into new equipment by your switchboard builder or easily included in your present set-up. For complete information just call or write.

CALCULAGRAPH COMPANY

HARRISON • NEW JERSEY

THE STANDARD OF ACCURACY SINCE 1892

Industry NEWS Briefs

This is your department. The editor wants news regarding your company. Send news items and photographs to News Briefs' Editor, 7720 N. Sheridan Road, Chicago 26, Illinois.

Iowa Telephone Company Sold

THE EMERSON Mutual Telephone Co., of Emerson, Iowa, has been purchased by W. L. Waugh of Imogene, Ia. Transfer of the veteran company, in existence since the early 1900's, was effective July 1.

North Dakota Company Files Corporate Articles

ARTICLES OF incorporation for the Carbury (N. D.) Tel. Co., a Bottineau County non-profit concern, have been filed with the North Dakota secretary of state.

The company plans to build 34¼ miles of lines at an estimated cost of $6,849, plus labor, to serve subscribers on a main line running from Bottineau to Carbury on five branch lines out of Carbury.

"Forbes'" Article Describes Growth of General Tel.

COMMUNICATIONS SECTION of June 15 issue of *Forbes* business and finance magazine, was devoted to General Tel. Corp. and its president, Donald C. Power, in an article which reviewed accomplishments of the General System since Mr. Power became president.

Under Mr. Power, the article pointed out, General has averaged an increase of 100,000 telephones a year in its 21-state operation. At the same time, the funded debt has been reduced from 57 percent of capitalization to 48 percent, while equity has risen from 21 percent to 32 percent. The $80,000,000 earmarked for this year in the company's five-year expansion program will carry General to the half-way mark in its 10-year plan to swell assets from the current $419,600,000 to $1,000,000,000 and increase the number of telephones from 1,700,000 to 3,000,000.

Forbes pointed out that more than 90 percent of General's postwar acquisitions began in negotiations initiated by other companies. Mr. Power, it is stated, prefers to buy companies which can be readily consolidated into the system's existing network, and not in "crazy-quilt" pyramiding, although General will acquire larger companies isolated from the rest of the system.

COVER STORY

Board of Directors of the Wisconsin State Telephone Association, 1954-1955. Seated (l. to r.): A. H. BOWDEN, Almond; L. M. LAMKINS, Manawa; J. F. BENJAMIN, Cumberland, vice president of the Wisconsin State Telephone Association; B. H. PIEPMEIER, Black River Falls, president of the association; T. H. SANDERSON, Rio, immediate past president of the association; W. E. LAWTON, Viroqua, director of the association; T. H. MORAN, Madison.

Standing (l. to r.): RAY J. RIORDAN, association secretary; H. G. ALLEN, Tomah; WYMAN W. WISWELL, Elkhorn; J. E. WELSH, Mt. Hope; H. P. SIEBKEN, Madison; H. B. FLOWER, Wisconsin Rapids; PAUL R. PARSONS, Rhinelander; G. F. MOSER, Sharon; G. A. RUTENBECK, Milwaukee; CARL F. MESS, JR., Phillips; D. E. PETERSON, Medford.

Two directors who were absent when the picture was taken included E. B. SAMP, La Crosse; and R. H. KEATING, Wausaukee.

Western Light & Tel. To Add $2,000,000 to Property Acct.

WESTERN LIGHT & Tel. Co., which serves more than 50,000 telephones along with providing other utility services in Kansas, Missouri, Oklahoma and Iowa, added $7,180,000 to its properties in 1953, while outlay for this year is estimated at $2,090,000, it reported last month.

Since the end of World War II, the company has increased its property account from $16,884,000 to $39,113,000. Net income last year of $1,263,452, compared with $995,607 in 1952. Revenues for the two years were $9,053,959 and $8,540,780, respectively.

Step-Up In Expansion Planned By B. C. Telephone Co.

B. C. TELEPHONE, Vancouver, B. C., is stepping up its expansion rate.

Last year the growth in the number of telephones exceeded that of any previous year. Last month, shareholders approved purchase of the physical assets of Chilliwack Telephones Limited. At the same time, the company plans to install hundreds more telephones and a large quantity of switchboard in the various exchanges recently taken over from the Dominion Government.

Proposed purchase price for Chilliwack Telephones is $679,000, conditional on the approval of the B.C. Public Utilities Commission and the

a NEW and IMPROVED *polyvinyl chloride compound*

NOW IN PRODUCTION

FOR ANSONIA® Ankoseal® *TELEPHONE CABLE JACKETS*

454 COMPOUND

- It is another plus value by the makers of the First Plastic Telephone Cable.
- It is the result of the constant research to provide ever better Ankoseal Cable.
- Ankoseal 454 Jacketing Compound improves on the long term weathering qualities of the 409 Compound used on the millions of feet of Ankoseal Telephone Cable now in service in a thousand Independent Telephone Companies.
- Use it on your next cable job — your telephone distributor can supply you. Ansonia Engineering Department is ready to answer your questions at all times.

THE ANSONIA WIRE & CABLE COMPANY

ANSONIA, CONNECTICUT

self-bonding insulating tape

Throughout the signaling and communications fields, more and more companies are depending on BI-SEAL for maximum protection against moisture and weathering. BI-SEAL is also preferred for its ease of application—a characteristic that is inherent in its composition.

BI-SEAL makes efficient wire and cable splices because

BI-SEAL is self-bonding. When applied, it fuses into a solid mass that creates a tight permanent seal over the splice. Because of its elasticity and mechanical strength, Bi-Seal molds itself into a perfectly conformed sheath over the most complex shape.

MAKES SPLICING EASIER, QUICKER. With no sticky adhesives, Bi-Seal is easier to apply in close clearances. There is no right or wrong side and no tacky surface to pick up foreign matter or stick together during application.

LOW TEMPERATURE CHARACTERISTICS. Bi-Seal retains its flexibility at temperatures as low as minus 67°F. This property facilitates application and provides perfect performance even under extreme weather conditions.

MOISTURE RESISTANT. Polyethylene, the basic material used in the formulation of Bi-Seal, is a strong barrier to water permeability and is virtually non-absorbent. The layers of the tape become so tightly fused that it is impossible to delaminate them. This provides a watertight seal and the tape tension developed on the wire or cable jacket insures against any lateral moisture penetration.

HIGH DIELECTRIC STRENGTH. Bi-Seal has an average dielectric strength of more than 1000 volts per mil of thickness.

WEATHER RESISTANT. Properly applied, Bi-Seal lasts as long as the wire and cable insulation itself in outdoor installations.

CAN BE STORED INDEFINITELY. Bi-Seal will not deteriorate nor deform even after years of storage.

Detailed information on splicing procedures available on request.

APPLIES FAST • STAYS FAST
BI-SEAL
BISHOP MANUFACTURING CORPORATION
14 CANFIELD ROAD, CEDAR GROVE, NEW JERSEY

Federal Board of Transport Commissioners.

At the end of last year, Chilliwack Telephones had 4,003 telephones in service in Chilliwack and applications for 645 more. Gross revenue in 1953 was $196,127, up 15.1% from the previous year's $170,459. Net profit was $17,524, 1.2% off on 1952 figure of $17,730.

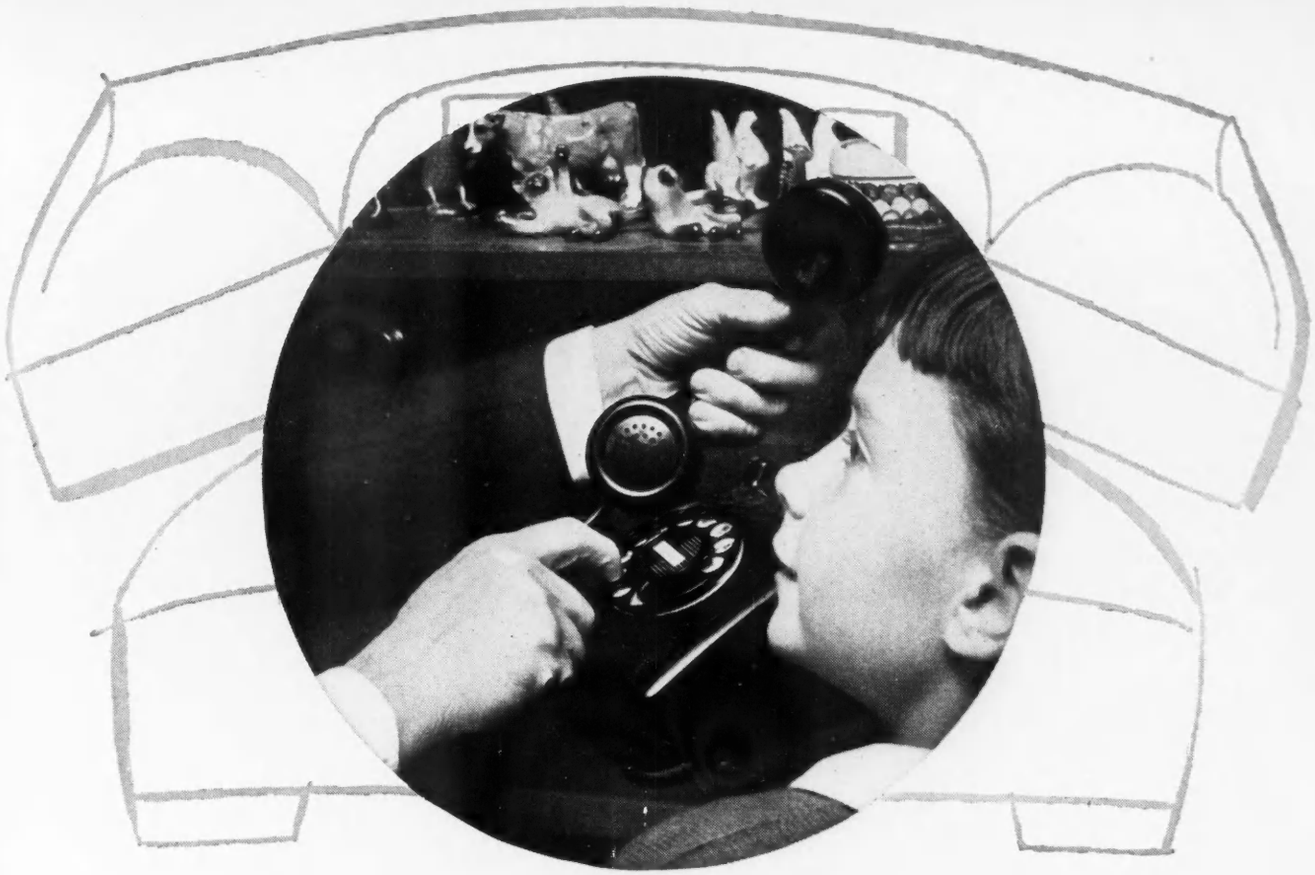
Installation plans are the first major move to increase local telephone facilities in the territory acquired by B. C. Telephones and North-West Telephone Co. last April. W. S. Pipes, vice-president and general manager of B. C. Telephones, emphasizes that equipment the company plans to install will not provide facilities initially to supply service to all waiting applicants in former government territory. Relief, he says, will come gradually, over a period of many months.

New Ulm, Minn., Co. Reports $22,563 Net

TOTAL OPERATING income of the New Ulm (Minn.) Rural Telephone Co. for the year ended Dec. 31, 1953, was $206,240.56, according to the statement read at the annual stockholders' meeting recently in the office of the company.

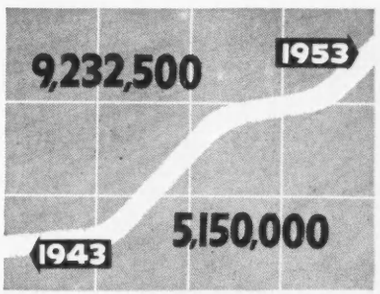
Local service revenue was $143,246.15 and toll service revenue was

EDWIN M. BLAKESLEE, president of General Telephone Co. of Calif. and immediate past president of the United States Independent Telephone Association, is devoting much of his time to appearances before service clubs, chambers of commerce and other civic organizations throughout the company's territory. In an effort to present the telephone story from top level, Mr. Blakeslee presents an industry program covering the relationship of the Independent industry with the Bell System and development of the telephone including a layman's description of how the modern dial system operates. He is shown with a dial demonstration unit at a recent address before the Santa Monica, Calif., Rotary Club.



The first dial was put there by an Independent Telephone Company!

Now 74% of all telephones in the United States are dial



TELEPHONES IN SERVICE
in Independent Telephone Companies

In 1889, a Kansas City businessman developed the first successful automatic dial telephone. Shortly afterward, his equipment was installed in an early Independent telephone exchange at La Porte, Indiana. History records this as the first dial telephone system in America. The development of dial service was necessary, not just fortunate. For hiring and training enough operators to handle today's huge volume of local telephone calls would be a near-impossible task.

Now, as in years past, America's 5,100 Independent Telephone Companies are adding to the value of your telephone service. Their 9 million telephones are linked with your phone. Their connecting long distance lines help speed your out-of-town calls. Their 1½ billion dollar investment in telephone service all across the nation is at your fingertips—always.

USITA

United States Independent Telephone Association

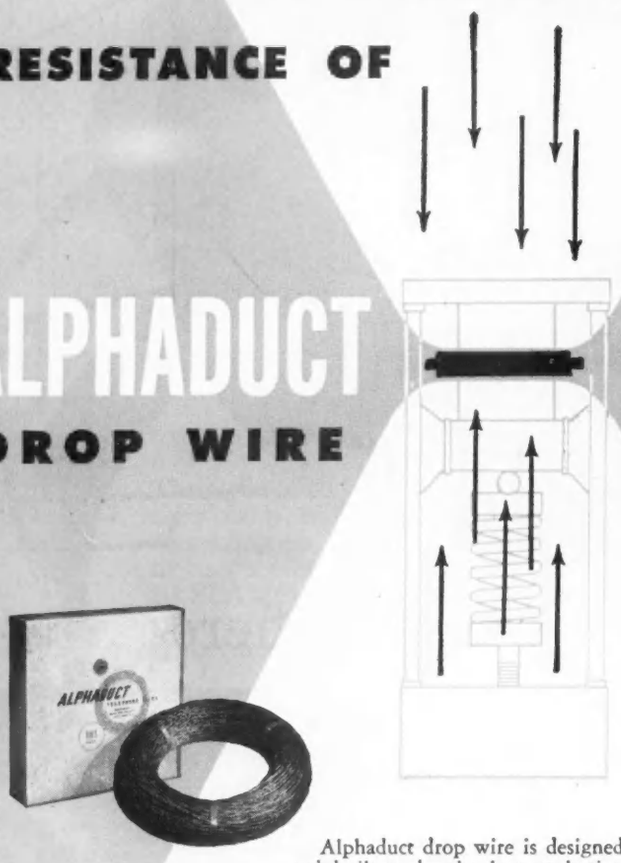
Munsey Building : Washington, D. C.

1500 pounds

MINIMUM COMPRESSION RESISTANCE OF

ALPHADUCT

DROP WIRE



Alphaduct drop wire is designed and built to be the longest lasting drop wire you've ever installed. It's tested . . . completely, thoroughly and often to make sure that every single coil is up to Alphaduct's rigid standards.

Here's how the insulation is tested to make sure it won't crush.

Short lengths of Alphaduct are placed between the steel plates of a compression testing machine. These plates are then forced together at uniform speed until the insulation crushes. Alphaduct parallel drop wire has to withstand a minimum load of 1500 pounds before it breaks. Each conductor of Alphaduct twisted pair will withstand a 1000 pound pressure.

You don't have to worry about a little rough handling breaking down this kind of tested insulation. Try Alphaduct drop wire. It's dated, so you can see for yourself the extra wear it provides.

ALPHADUCT WIRE AND CABLE COMPANY • MILLTOWN, NEW JERSEY

NATIONAL DISTRIBUTORS • LEICH SALES CORPORATION, CHICAGO, ILLINOIS

REGIONAL DISTRIBUTORS • PANKEY SUPPLY CO., CHARLOTTESVILLE, VA.

THE LINDSAY TELEPHONE SUPPLY CO., CLEVELAND, OHIO

$57,541.58. Both items are higher than those of the previous year. Other small items made up the operating revenue.

Operating expenses totaled $184,173.41 for the past year. Large items of this expense were repairs of various kinds to the system and employes' salaries.

Net income of the company for 1953 was $22,563.58. Fixed assets of the company were $632,917.08 on Dec. 31, 1953.

NARUC Maps Plans For October Convention

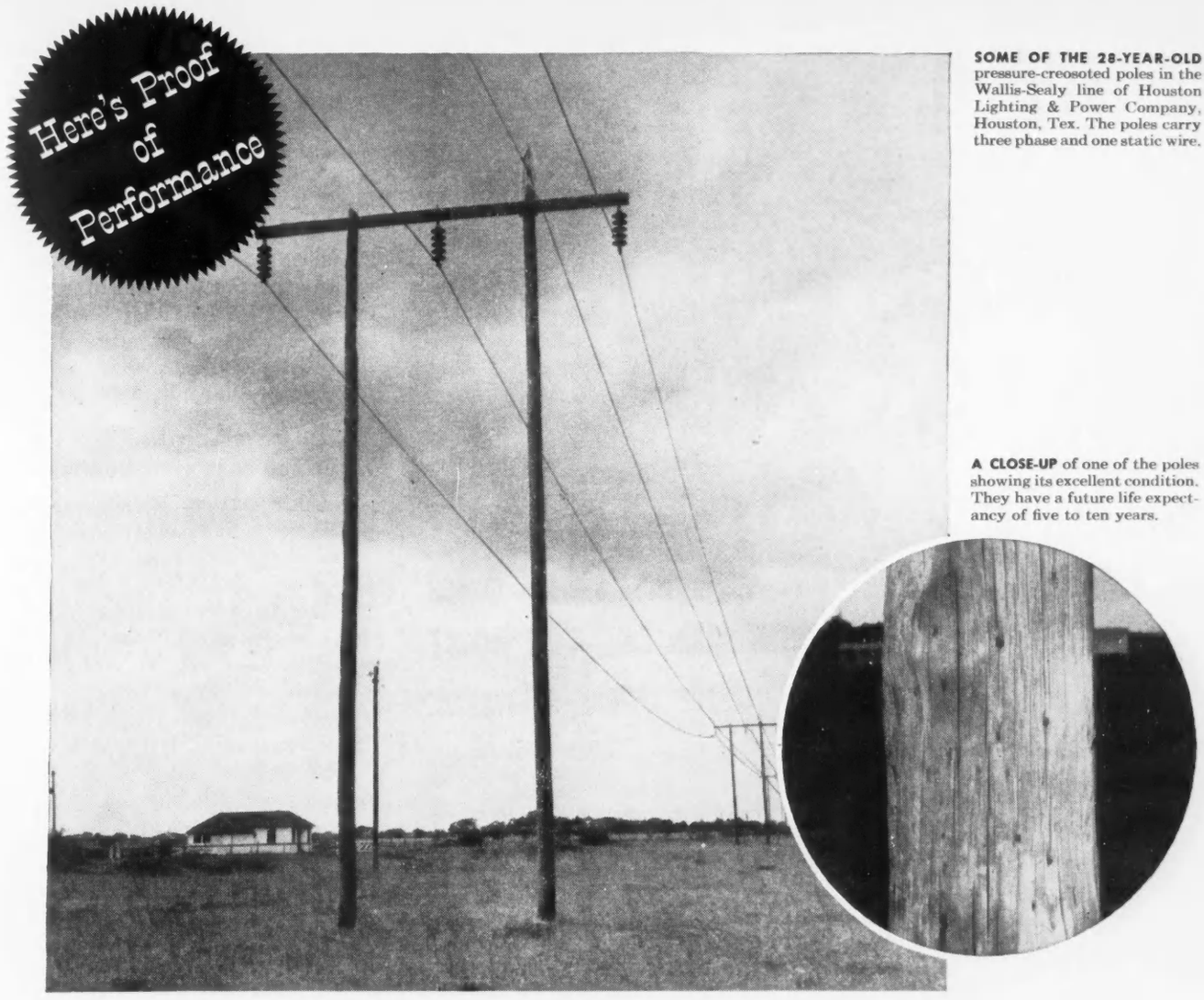
TOGETHER WITH a discussion of regulatory fees and the assessment of the costs of regulation, a four-point discussion of regulation and technological developments in the communications field, including microwave installations and mobile telephone service, is tentatively planned for the annual convention of the National Association of Railroad & Utilities Commissioners in Chicago Nov. 8-11. If speakers are available, the four topics would be: community television systems; mobile telephone service; telephone answering devices; and the function and status of microwave radio installations.

The convention topics and the selection of the LaSalle Hotel as the convention site, were scheduled at a meeting of the NARUC Executive Committee in Washington last month.

Minnesota Co-op Launches $390,000 Project

A PROJECT which will bring modern telephone service to about 277 rural subscribers by January 1, 1955, was launched recently by the Crow Wing Co-operative Rural Tel. Co. According to Manager J. S. Zum-

B. H. PIEPMEIER, president of Community Telephone Co. of Wisc., presents MISS MINNA RIEMER, chief operator at Clinton, Wisc., a 40-year service pin.



SOME OF THE 28-YEAR-OLD pressure-creosoted poles in the Wallis-Sealy line of Houston Lighting & Power Company, Houston, Tex. The poles carry three phase and one static wire.

A CLOSE-UP of one of the poles showing its excellent condition. They have a future life expectancy of five to ten years.

247 pressure-creosoted poles installed in 1926

...233 STILL IN GOOD CONDITION TODAY

● A combination of warm moist climate and the prevalence of termites makes the use of pressure-creosoted poles a necessity for Houston Lighting & Power Company. It means the difference between five years of life for an untreated pole to 30 to 35 years for a treated one.

A good example of sound pole line planning is found in the 11.8 miles of 66 KV outer loop between the Texas communities of Wallis and Sealy—all pressure-creosoted poles. Here 247 poles were installed in 1926 (actually 260—but 13 were since replaced to obtain greater height). Today, after 28 years of exposure to weather and wood's natural enemies, 233 poles—or over 94% of the original line—remain in good condition, with a future life of 5 to 10 years.

Houston Lighting & Power Company first used pressure-creosoted poles in 1921, and conversion has been complete now for more than 20 years. Southern yellow pine and fir poles are treated with Creosote to 10 pounds retention.

You can count on uniformly good results when your poles are treated with USS Creosote—the product of United States Steel's tar distilling operations. For more information on USS Creosote and the long pole life it assures, contact our nearest Coal Chemical sales office or write directly to United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pa.

USS CREOSOTE

4-1466

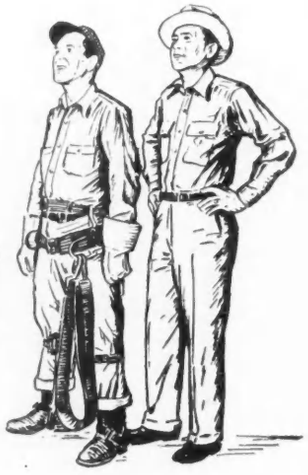
UNITED STATES STEEL

Linemen call this hoist a "HONEY"

Designed especially for line work, this NEW CHANCE HOIST has all the features linemen want!

Here's what makes this ONE-TON HOIST the linemen's favorite:

- Well-balanced, easy-to-grip handle that operates from either side to avoid obstructions.
- "Free-wheeling" for ease in hooking to load, with an automatic locking control to prevent accidental dropping of load.
- Both half link and full link take-up for accuracy and speed.
- Easy working swivel hooks on both the chain and the hoist housing. Safety latch hooks, if desired, at slight additional cost.
- All working joints fitted with permanently lubricated oilite bearings.
- All working parts fully enclosed in the housing to prevent injury to fingers.



Here's the tool your linemen asked for in a nationwide field survey—a tool developed by Chance engineers, who *know* line work. It has all the good features linemen said they wanted in a hoist. It's a strong, fast-operating, lightweight tool (12 pounds) with a flexible steel load chain that won't kink, bind or uncouple. Controls can be worked without removing gloves. It's rated to lift a one-ton load and it's tested to 3000 pounds. Give your lineman the extra help and safety that the Chance Hoist can provide.

A·B·CHANCE CO·

CENTRALIA, MISSOURI • SAN FRANCISCO, CALIFORNIA

ABC INDUSTRIES

walt, this first leg of the co-op's proposed system will serve the Freedhem, Harding, Hillman and Sullivan Lake areas in Minnesota, and will cost a total of $390,000.

Construction of 213 miles of new lines is to be completed in about 100 days, and contracts are being let for automatic exchange buildings at Freedhem and Krafve's Corner.

The Crow Wing Co-op expects approval of REA funds for completion of their system to cover Motley, Pillager, Mission and Brainerd (Minn.) by mid-July, 1955.

U. S. Firms Can Bid On Nato Telecommunications

OPPORTUNITY TO bid on contracts under the military construction program of the North Atlantic Treaty Organization (NATO) — including facilities for telecommunications, radio navigational aids and radar installations — will be afforded to United States firms, the U. S. Departments of Commerce and Defense jointly announced last month.

The facilities involved are those required for the support of allied military forces assigned to NATO military headquarters, such as Supreme Headquarters Allied Powers Europe (SHAPE), and Supreme Allied Commander Atlantic (SACLANT). Plans include construction projects in Norway, Denmark, the United Kingdom, the Netherlands, Belgium, Luxembourg, France, Portugal, Italy, Greece, and Turkey.

Total cost of the program is estimated to exceed $2,000,000,000, with authorizations — of which a substantial amount still is available for international competitive bidding — already granted for approved programs totaling $1,600,000,000.

Co-op Increases Board of Directors

CENTRAL TEXAS Telephone Co-operative, Goldthwaite, Texas, has increased its board of directors from five to nine members.

Clyde Sanders, general manager of the co-op, announced that three new members have been elected to the board and one more is expected to be added at the next regular meeting.

Those added to the board are W. J. Rickles, Paul Lohn, and E. A. Kuykendall.

—know your commissioners

Meet

Hon. Warren Buchanan

SIXTH of a series of articles introducing members of state and national regulatory commissions and officers, directors and chairmen and committee members of the National Association of Railroad & Utilities Commissioners.

WHEN THE chairman of the Public Service Commission of Indiana can find time and opportunity for a bit of relaxation and a change of scene — which is not so easy in these busy days of regulatory commissions — he can and usually does hie himself to a farm with an unique characteristic.

This 240 acres of rich Indiana soil has been in the family of the Hon. Warren Buchanan since the original land grant for it was issued to his great-great-grandfather. That was back in the year of 1820, and the document was signed by the then President of the United States, James Monroe!

The Honorable Warren Buchanan is Chairman of the Indiana Public Service Commission.

Warren Buchanan was born in Rockville, Indiana, and was raised there and in nearby Marshall. For a time he was a teacher. Then, turning to the profession of law, he was graduated from the Law School of the University of Indiana in 1936.

Back in Rockville and faced with the problem of so many young lawyers seeking to establish a law practice — i. e., the business of finding paying clients — Mr. Buchanan did what so many other young lawyers do in small towns. He ran for office.

He was elected — somewhat, we gather, to his own surprise — prosecuting attorney of his county. And, what is more, he continued to be elected to the office, serving in it four terms and until, in 1943, he resigned to enlist in the Navy.

Upon his return to Rockville he engaged in private law practice there until his appointment by Governor George M. Craig, in January, 1953, to the Chairmanship of the Public Service Commission of Indiana. That appointment gave Warren Buchanan an opportunity to perform a major service for his beloved home state. Working hard in his new position his primary concern was to conduct his office in a manner that would *best serve the State of Indiana.*

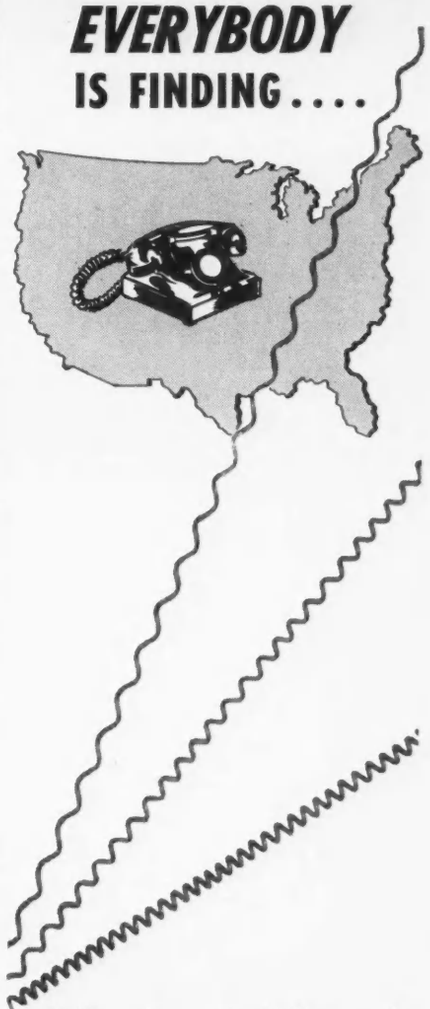
Recently, he was honored by the National Association of Railroad & Utilities Commissioners which named him to its Telephone Committee.

Those who know Mr. Buchanan tell us that he is constantly looking toward the future and that in his regulatory capacity, he serves not as an arbitrator but as a loyal citizen of Indiana, allowing his inborn desire to do "what's best for Indiana" to guide his decisions.

Mr. Buchanan is an outstanding student of two subjects that are of interest to every American — the life of Abraham Lincoln and the story of the Civil War.

"The stories my grandfather told me," he says, "of his experiences in

ACROSS THE NATION
EVERYBODY
IS FINDING....



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On all new telephones, be sure to specify KOILED KORDS retractile telephone cords, and also use them for replacements as needed. Available from your independent telephone supplier to fit all telephones.

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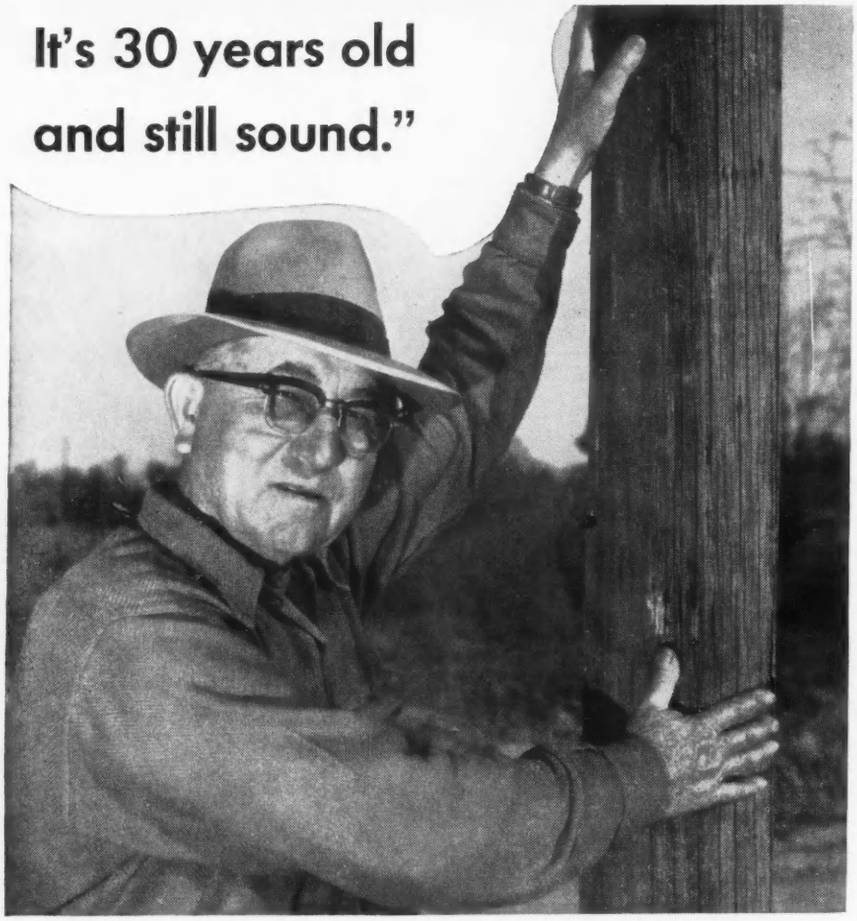
Line Foreman Praises Koppers Poles:

"Here's what I call a good pole. It's 30 years old and still sound."



W. E. DeVanie, Line Foreman, Maintenance and Construction, Southwestern Gas and Electric Co., Texarkana, Texas. This Koppers Pole is part of a transmission line erected in 1924.

● W. E. DeVanie, shown here, knows all about poles. For 36 years he has been doing maintenance and construction work for the Southwestern Gas and Electric Co., Texarkana, Texas. In 1924, when he was made Line Foreman, one of his first assignments was to supervise the construction of a 7-mile transmission line.

Here's what Mr. DeVanie says about this line: "Only Koppers Pressure-Creosoted Poles were used. During the 30 years since this line was built, some poles have been hit by lightning. Others have been removed so that longer poles could be installed at road crossings. I can't remember having to remove a single pole because of decay."

This shows the kind of service utility companies are getting from Koppers Pressure-Creosoted Poles. By lasting so long, these poles cut maintenance and replacement costs. They make line operation more efficient as well as more economical. Write for prices and further information on Koppers Poles.

KOPPERS COMPANY, INC.

KOPPERS®

PRESSURE-CREOSOTED POLES

Wood Preserving Division
Pittsburgh 19, Pennsylvania

the Civil War, started my interest in Civil War history, as well as the life and experiences of Abraham Lincoln. Since then I have collected every definitive book published concerning these subjects."

Mr. Buchanan is married and has two children; a son, 17, and a daughter, 12.

His principal hobby, he tells us, is that of raising Hereford cattle on that Indiana farm that has been in Buchanan family for nearly 150 years.

The story of Warren Buchanan — teacher, lawyer, public servant, student of his country's history, regulator and farmer — is typical, we think, of the life story of many other busy and successful Americans. It is the story of the kind of people who have helped to make, and keep, this country great.

And nowhere, we think, is that done any better than in the soverign state of Indiana!

Coming Conventions

Michigan Independent Telephone Association, Hotel Pantlind, Grand Rapids, Sept. 9, 10.

Rocky Mountain Telephone Association, Newhouse Hotel, Salt Lake City, Utah, Sept. 16, 17.

Tennessee Telephone Association, Hermitage Hotel, Nashville, Sept. 16-17.

Arkansas Telephone Association, Majestic Hotel, Hot Springs, Sept. 20, 21.

United States Independent Telephone Association (National Convention), Conrad Hilton Hotel, Chicago, Oct. 11, 12, 13.

North Carolina Telephone Association, Carolina Hotel, Pinehurst, Oct. 18, 19.

South Carolina Telephone Association, Myrtle Beach, S. C., (Hotel to be named later), Oct. 25, 26.

Virginia-West Virginia Telephone Association, Roanoke Hotel, Roanoke Oct. 28, 29.

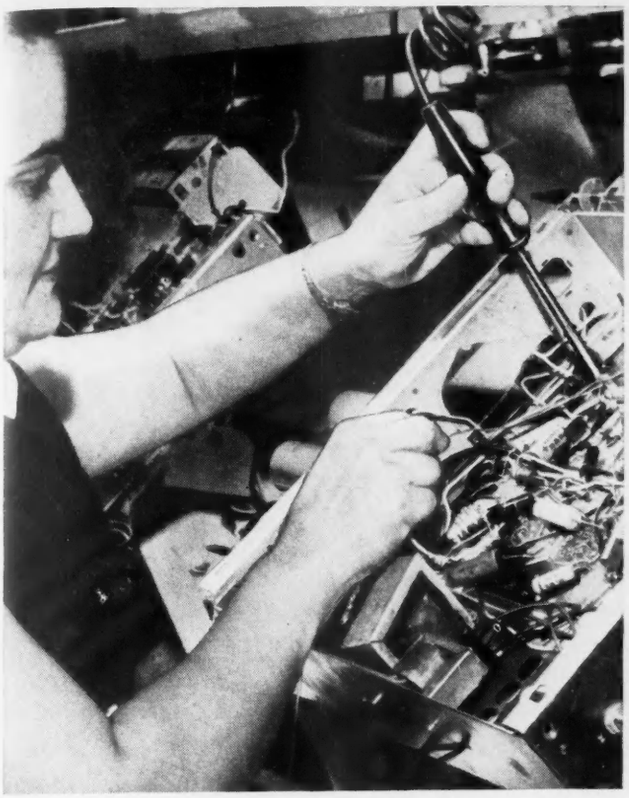
Oklahoma Telephone Association, Huckins Hotel, Oklahoma City, Nov. 4, 5.

Alabama-Mississippi Telephone Association, Thomas Jefferson Hotel, Birmingham, Ala., Nov. 8, 9.

South Dakota Telephone Association, Sioux Falls, Nov. 11, 12.

Georgia Telephone Association, Bon Air Hotel, Augusta, Nov. 12, 13.

Florida Telephone Association, Soreno Hotel, St. Petersburg, Nov. 15, 16.



LIGHT-AS-A-PENCIL G-E MIDGET reduces operator fatigue, has longer-lasting Ironclad tip. The Midget solders like a pencil dots an "i."

EXTRA-HEAVY-DUTY G-E IRON with long-life calorized copper tip is ideal for soldering heavy-gage cans and armature windings.

You get lower costs, faster soldering with the complete line of long-life G-E irons

Select a soldering iron from General Electric's complete line for easier, faster, cost-cutting soldering. You can choose from 24 different irons with ratings from 25 to 1250 watts.

Long-life G-E Ironclad Copper Tips last up to *ten times as long* as ordinary tips. Ironclad tips combine the durability of iron and excellent heat-transfer of copper.

For Soldering Small Connections, you'll want to try the G-E Midget iron with easily interchangeable $\frac{1}{4}$-in., $\frac{1}{8}$-in., and $\frac{3}{16}$-in. Ironclad tips. This $1\frac{3}{4}$-ounce, 25-watt iron reduces operator fatigue, makes pinpoint connections. And because the Calrod* heater is *built right into the tip,* you get maximum heat transfer, amazing heat recovery for an iron of this size.

For Medium-sized Jobs, try G.E.'s sturdy Lightweight iron. This high-speed iron for continuous soldering takes plenty of hard use. Because the iron has a thin shank and interchangeable $\frac{1}{4}$-in. or $\frac{3}{16}$-in. Ironclad tips, you can solder tight joints without damaging small connections.

For the Bigger Soldering Jobs, General Electric has larger irons ranging from the 75-watt, $\frac{1}{2}$-in. tip unit to the heavy-duty 1250-watt, two-inch-copper-tipped model. With a G-E Calrod heater *cast into the heating head,* you get unusually quick heating and high efficiency.

Contact Your General Electric Sales Office or Distributor to solve your soldering problems. Start cutting costs *and* increasing production with long-life, high-speed irons from the complete General Electric line. And for more information mail the coupon at right.

*Reg. Trademark of the General Electric Co.

Sect. 720-126, General Electric Co., Schenectady 5, N. Y.

Please send me Bulletin GEA-4519D, Industrial Soldering Irons.

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Company_____

Address_____

City_____ **State**_____

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GENERAL ELECTRIC

from the Capitol

Washington Bureau Reports

By ROLAND DAVIES & FRED HENCK

BRIEFS

■ *REA will have about $85,592,000 available for farm telephone loans in fiscal year which began July 1. As of May 31, REA had on file 293 applications for telephone loans, totaling $94,072,000.*

• • • •

■ *FCC granted Southeastern Tel. Co. authority to set up microwave relay link to provide telephone service between Crestview, Fla., & Elgin Air Force Base. Cost will be $44,000.*

• • • •

■ *FCC set July 26 date for hearing on Indiana Bell's application to acquire Armstrong Tel. Assoc., Chandler Tel. Co., Pikes Peak Tel. Co., Caborn Tel. Co., & Marrs Township Tel. Co.*

• • • •

■ *Charles W. Potter appointed assistant v.p. AT&T Co. personnel relations dept. He succeeds Herbert L. Deal. Roy C. Echols, Oklahoma gen. mgr. of S.W. Bell succeeds Mr. Potter as v.p. & gen. mgr. & a director of Indiana Bell. Harold B. Groh, assistant v.p. of S.W. Bell, succeeds Mr. Echols as Oklahoma gen. mgr.*

• • • •

■ *Senator Earle C. Clements (D., Ky.) named to Interstate-Foreign Commerce Committee to succeed late Senator Lester D. Hunt (D., Wyo.).*

SENATE confirms Doerfer appointment to FCC. . . . Bargaining objectives outlined at CWA convention . . . Congress approves Agriculture Appropriation Bill . . . Western Union tries new approach to communications rate making.

SERVICE on the Federal Communications Commission never looked more unattractive than it did for a few hours during a hearing before the Senate Interstate & Foreign Commerce Committee.

After listening to Edward Lamb, Ohio-Pennsylvania-Florida broadcaster and publisher, charge that FCC Commissioner John C. Doerfer had carried on a personal and political feud against him and that Mr. Doerfer therefore had demonstrated his unfitness for public office, one observer commented that he would not accept appointment to the FCC "for three times that $15,000 salary."

That the nation is fortunate that some public officials are willing to take the verbal abuse and serve for moderate salaries was again exemplified when Mr. Doerfer, denying the charges, was confirmed by the Senate for a full seven-year term on the Commission.

Mr. Lamb, who has been accused of communist-line associations and activities at various times in the past, said that he has been cleared by all concerned but that, apparently at Mr. Doerfer's behest, the Commission is holding up various actions connected with his broadcasting and television properties. He commented — in what was shaping up as a rather sensational hearing — that other FCC members had told they were "helpless" in the situation, and that Mr. Doerfer had told him he would be better off in obtaining FCC action if he were still a Republican. (Mr. Lamb testified that he had once run for office as a GOP member but later switched his personal political affiliation to the Democratic party.)

The charges were pretty well deflated the next day when Benito Gaguine, an attorney who formerly represented Mr. Lamb and who sat in on several of the conferences described by Mr. Lamb, substantiated Mr. Doerfer's blanket denial of the charges in several important particulars.

The Senate committee then unanimously approved the nomination, and the Senate confirmed Mr. Doerfer for the post the next day.

It had appeared that Commissioner Doerfer's frequently-reported selection as the next Chairman of the FCC might be affected by the Lamb allegations while the hearings were going on, but his overwhelming approval by the legislators very likely leaves him in line as the next Chairman. Rosel H. Hyde, who served for a year as Chairman under appointment by President Eisenhower, has been acting Chairman of the FCC for several months.

Mr. Doerfer's position has more

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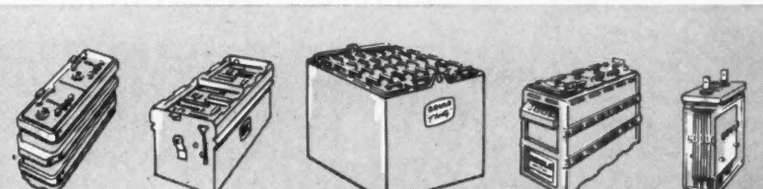


For Railroad Air Conditioning and Lighting

For Mine Shuttle Cars and Locomotives

For Electric Industrial Trucks

For Diesel Locomotive Starting

For Standby and Emergency Power

than passing interest for Independent telephone people, even those who are not subject to Commission regulation. He is the only member of the FCC with previous public utility regulatory experience — he was Chairman of the Wisconsin Public Service Commission — and in addition he has headed the Commission's activities looking toward a revision of interstate-intrastate telephone separations procedures. The importance of the latter to long-distance and possibly local revenues is obvious and could be substantial.

CWA Convention

THE COMMUNICATIONS Workers of America has had its annual convention, with bargaining objectives outlined which in time doubtless will have significant effects on almost the entire telephone industry.

Delegates to the convention amended the bargaining resolution presented to them to add a couple of goals, indicating where their thinking lies. The items added were "shortening of eight-hour tours for all female workers" and "longer vacations."

Other items already included in the bargaining resolutions encompassed such objectives as elimination of area differentials, basic wage increases, equal pay for equal work, health insurance, job reclassifications to eliminate inequities, higher minimum pensions and elimination of social security deductions from pensions, and reduction in the length of progression schedules.

CWA also laid stress on the leveling off of its membership strength, and gave particular emphasis to organizing new units in areas not covered by the recent CIO-AFL "no-raid" agreement, and to signing up more employes in the areas where it already holds contracts.

An internal matter, the dissolution of the units representing Western Electric Co. sales and installation workers as separate districts of CWA, with directors having votes on the union's executive board, received much of the attention at the convention. An attempt to upset last year's convention action directing the dissolution was overridden by a close vote of 124,367 to 120,167.

The Convention was told that "membership development stands at about 71% of CWA's potential within its present contract jurisdiction. A target of 85% is both feasible and reasonable. Every effort must be made to achieve this target in the coming year."

Relatively little sustained attention was given to what started out as CWA's number one demand for the current year in Bell System negotiations — company-supported health insurance. The first group of contracts signed between CWA and Bell System units this year did not contain any provision for such plans.

$85,592,000 *Available For REA Telephone Loans*

THE RURAL Electrification Administration will have available about $85,592,000 for farm telephone loans in the fiscal year which began July 1, it was estimated after Congress approved a conference report on the Agriculture appropriations bill.

In addition to the $75,000,000 available in the appropriations bill, REA has carryover in loan authority of $8,592,000. In addition, approximately $2,000,000 probably will be available in fiscal 1955 for new telephone loan allocations as a result of rescissions of allocations previously made.

The availability figure is $3,000,000 higher than the fund which was on hand for the fiscal year ended June 30. The amount available during the past year — $82,592,000 — received a big boost when the $6,000,000 Hoosier Telephone Cooperative loan was rescinded.

In the conference report, the additional $200,000 administrative fund voted by both the House and Senate was approved, and restrictions which would have limited use of the added money to processing electrification loans were removed. REA receives a total of $7,285,000 in administrative money under the bill.

Incidentally, as of May 31, the latest figures available, REA had on file 293 applications for farm telephone loans, totaling $94,072,000.

Western Union Tries New Rate-Making Plan

NEW APPROACH to communications rate-making is being tried by the Western Union Telegraph Co. in new interstate telegraph rates filed with the FCC to become effective July 15.

The telegraph company is putting into effect a 20-cent per message discount for large users, the first such arrangement in its 103-year history. The new rates are estimated to produce annual revenues of about $10,000,000.

The 20-cent per message discount would apply to all telegrams of any classification in excess of 100 sent paid by customers with tieline connections in a given month.

Western Union said "The discount will recognize Western Union savings in labor costs on messages transmitted by customers to the telegraph company of facsimile, teleprinter, and other direct wire connections. The monthly minimum figure was set because equipment and maintenance costs offset labor savings on the first 100 messages.—THE END.

General Tel. Names Norris V. P. Operations

FREDERIC E. NORRIS will become vice president-operations of General Telephone Corp. on Aug. 1, according to an announcement released by Donald C. Power, General Telephone Corp. president.

Mr. Norris was formerly president of General Telephone Co. of Michigan, one of the 16 subsidiary operating telephone companies within General Telephone System, and has been associated with the General Telephone System for more than 30 years.

Louis H. Meyer will succeed Mr. Norris as president and a director of General Telephone Co. of Michigan. Mr. Meyer was president of General Telephone Co. of Upstate New York and several smaller companies within General Telephone System.

Continuously employed with General Telephone System and predecessor companies since 1927, Mr. Meyer has been active in Johnstown and Fulton County civic affairs.

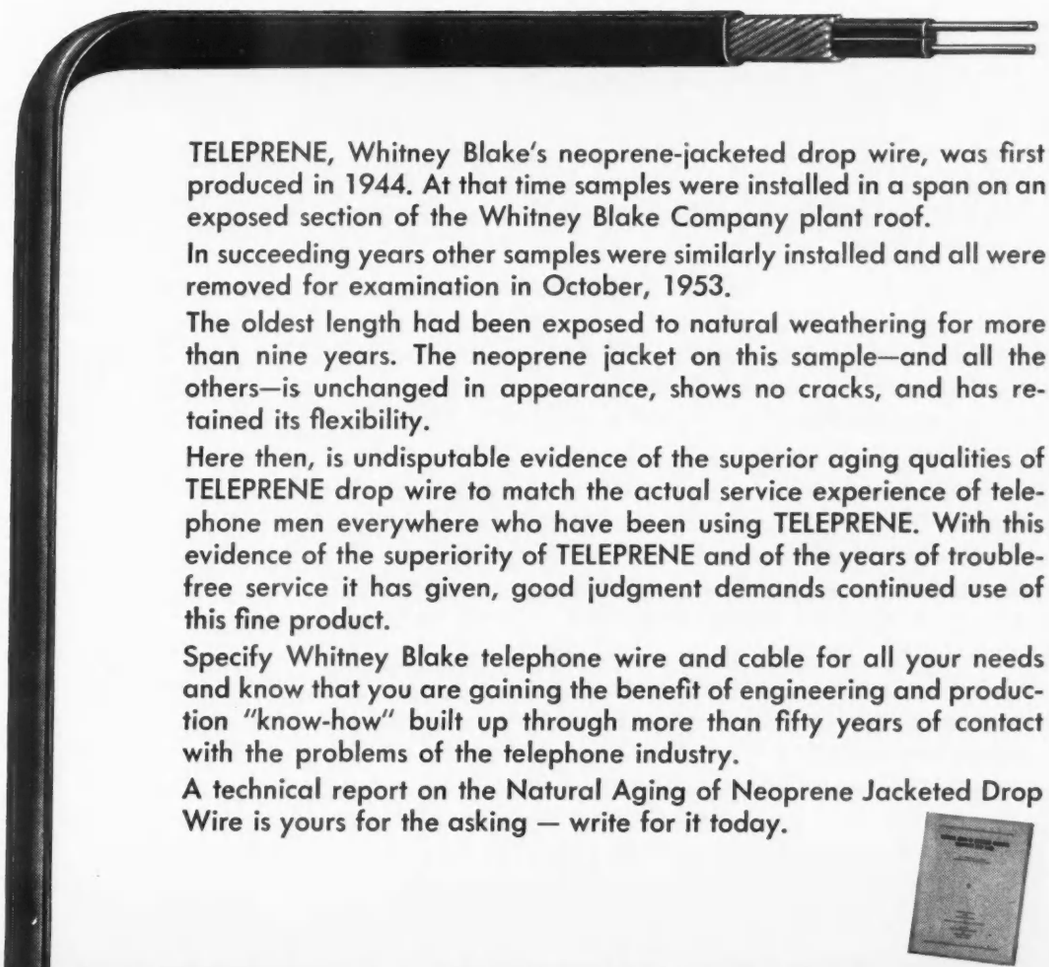
Robert W. Wopat will replace Mr. Meyer as president and a director at General Telephone Co. of Upstate New York. Mr. Wopat was formerly operating vice president of General Telephone Co. of Ohio, with headquarters at Marion, Ohio.

An electrical engineer with a degree from the University of Michigan, Mr. Wopat has spent all of his business career in the telephone industry. From 1943 to 1946 he served in the United States Navy, attaining the rank of Lieutenant at the time of his separation from service.

AFTER NINE YEARS WEATHERING

TELEPRENE®

IS STILL AS GOOD AS NEW



TELEPRENE, Whitney Blake's neoprene-jacketed drop wire, was first produced in 1944. At that time samples were installed in a span on an exposed section of the Whitney Blake Company plant roof.

In succeeding years other samples were similarly installed and all were removed for examination in October, 1953.

The oldest length had been exposed to natural weathering for more than nine years. The neoprene jacket on this sample—and all the others—is unchanged in appearance, shows no cracks, and has retained its flexibility.

Here then, is undisputable evidence of the superior aging qualities of TELEPRENE drop wire to match the actual service experience of telephone men everywhere who have been using TELEPRENE. With this evidence of the superiority of TELEPRENE and of the years of trouble-free service it has given, good judgment demands continued use of this fine product.

Specify Whitney Blake telephone wire and cable for all your needs and know that you are gaining the benefit of engineering and production "know-how" built up through more than fifty years of contact with the problems of the telephone industry.

A technical report on the Natural Aging of Neoprene Jacketed Drop Wire is yours for the asking — write for it today.

Well Built Wires Since 1899

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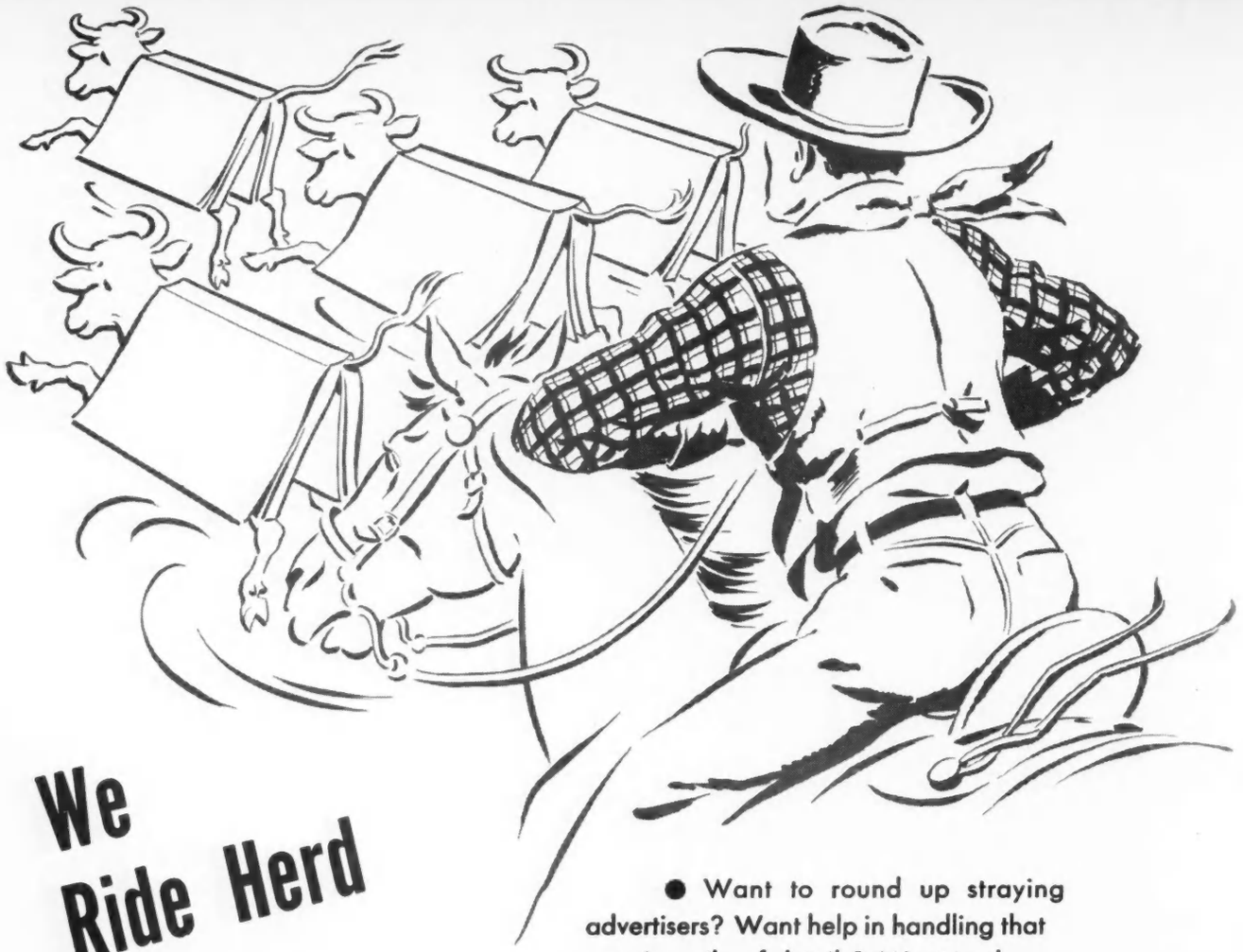
WHITNEY BLAKE COMPANY

NEW HAVEN 14, CONNECTICUT



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Omaha Nat'l Bank Bldg. . . . ATlantic 0188

KANSAS CITY, MO.
810 Baltimore . . . HArrison 1270

PHILADELPHIA, PA.
1201 Chestnut . . . RIttenhouse 6-4440

BALTIMORE, MD.
1229 North Charles . . . VErnon 7-0642

The Care and Feeding Of Stockholders

WE HEARD A story the other day about a company picnic — one of those affairs where the bosses and the rank-and-file gather out in the open and eat hot dogs and drink pop and have contests and a larruping good time.

In this particular case everybody was happy excepting a stranger who sat silently on a stump at the edge of the picnic grounds, looking very much out of the festivities. Nobody offered him anything to eat or drink. In fact, nobody knew who he was.

Finally, one of the merry-makers went over to him and said: "Mister, you don't seem to be having any fun. Who are you, anyway?"

"Me?" replied the man. "Why, I'm only a stockholder."

We're pretty certain that this never really happened. But, just the same, it reminds us of something.

It reminds us that, every year, we see thousands upon thousands of words in print on the subject of the maintenance by Independent telephone companies of good public relations — but we see very little in print about the maintenance by these same companies of good relations with their stockholders.

Yet stockholders are very important people, these days, in the life of any telephone company in which there is public ownership. And there are more such stockholders now than there ever were before.

If the stockholder is satisfied with his investment in the telephone company, he will quite likely put his certificate for telephone stock at the bottom of his safe deposit box — and there, excepting for some unusual circumstance, it will stay. His money becomes, for practical purposes, a permanent investment in the telephone company, which is the kind of money a telephone company needs.

In such cases there is another factor, just as important and as helpful to the telephone company. That is the fact that the satisfied stockholder is usually ready and willing to take up his allotment of new shares of the company when the company undertakes to raise additional capital by the sale of stock.

There can of course be a variety of opinions as to just what a company can or should do to keep its stockholders happy.

Obviously, the first thing is to earn and pay the stated dividends, if the stock be preferred, or a satisfactory dividend if it be common stock. We emphasize the word "earn" as well as the word "pay."

Probably the next most important thing is to keep the stockholder informed on the progress of the business and its current earnings. Many companies do this by issuing condensed quarterly reports.

During the past decade or so Independent telephone companies have made great progress in the issuance of not only comprehensive but also attractive annual reports to stockholders. Reports of this type have had, we believe, a very favorable effect upon the attitude of the stockholder toward his investment in the company.

Whatever the methods used, if they contribute to the confidence of the stockholder in the company and its management and encourage him to retain and perhaps add to his investment in the company, they are of value to both the company and the stockholder.

And, as we have said before, the stockholder is an important individual these days.

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THAT'S just one of the ingenious advantages of a Stromberg-Carlson No. 3 type Toll Board. Produced in a standard model of ONE position (with optional annex), it allows the operating company *to buy only a single position* and to make *minimum* additions whenever traffic warrants.

Add such features as Removable Jack Sleeves . . . Operator Toll Dialing . . . Keysender Operation . . . then you'll understand why progressive independents from Maine to California have investigated the field and chosen Stromberg-Carlson.

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Booklet T-113 tells all about these boards and is yours for the asking. Drop a line today.

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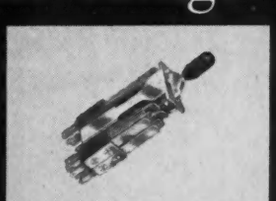
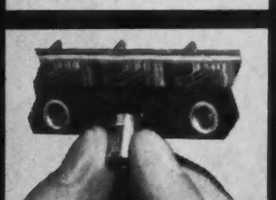
We attach *BIG* importance . . . to little things

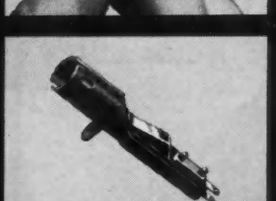
A dial is 3 inches in diameter, but it has to endure millions of operations. A jack is smaller than a pencil, but has to be as strong as Gibraltar. Keys, coils, capacitors, cords and a score of other things are small in size; but on their quality and stability your whole service—or its breakdown—may well depend.

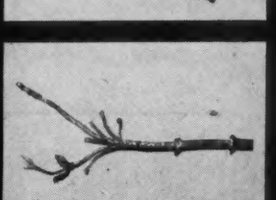
We'll take as much pride and care in serving your needs for small parts as we do in designing a complete XY® dial system.

Buy wisely—let us supply your smallest needs as well as your largest ones. "There is nothing finer than a Stromberg-Carlson."









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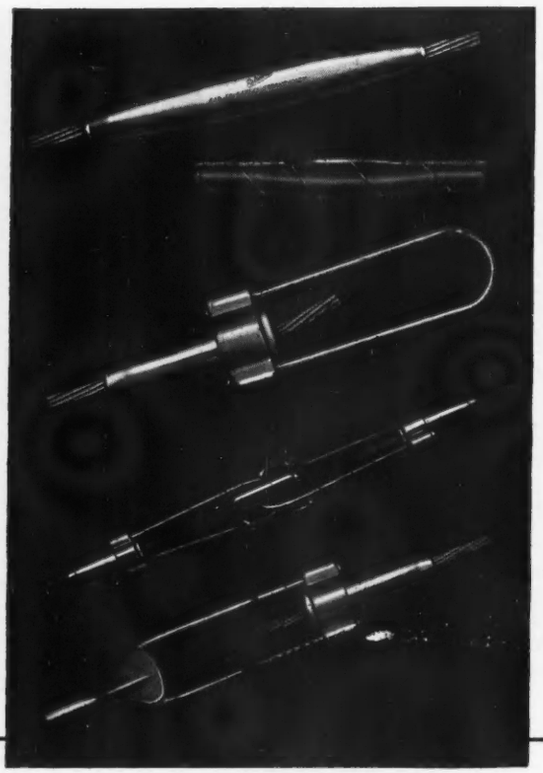
TWO OLD PROBLEMS IN OUTSIDE PLANT CONSTRUCTION ARE SOLVED BY THESE TWO NEW MEMBERS OF THE Reliable STRANDLINK AND STRANDVISE FAMILY



1. Splice-reducing size of suspension strand

2. Slack span and false deadend construction

Strandlink is now available in a reducer splice (3/8" - 5/16"). Strandvise, with a suitable, long flexible bail, is available for false deadend and slack span construction. These new tools really take the hard work out of steel strand construction.

Are you using Strandlinks and Strandvises?

It appears that no other method can match their low "installed cost" and the speed and ease with which Strandlink and Strandvise splice and terminate suspension strand and guy strand. Available for 1/4", 5/16" and 3/8" strand — perform equally well on all grades of strand.

RELIABLE ELECTRIC CO.

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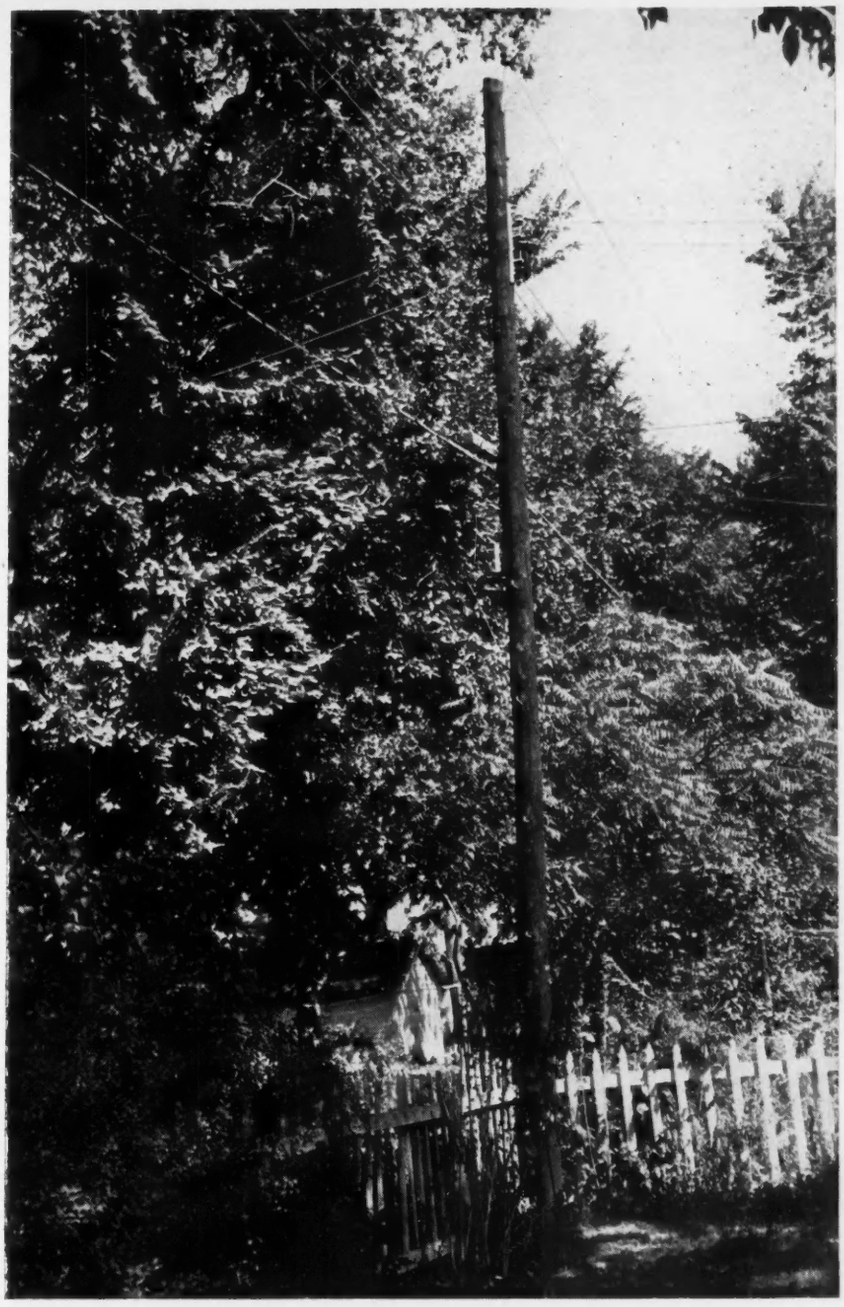
Ask for sample for examination and detailed test reports

Reliable

Telephone Protective and Terminal Equipment for all Station, Line and Central Office Needs.

OVER 45 YEARS' SERVICE TO THE UTILITIES

Are My Rates Adequate ??



THE OBTAINING of improved rates by Independent telephone companies is neither a duty nor a chore but is a necessity and it should be approached in a manner consistent with the thinking of your Regulatory Commission, and also in a manner consistent with the general trend of rate making as it is applied to other telephone companies. With the steady increase in the cost of material, and, more important, with the increase in wages, it is impossible for a small company to continue to operate under rates which have been in effect for many years without eventually suffering severe damage to your capital investment and certainly severe damage to the service you are rendering to your public.

There are two major considerations in connection with your rate case which should be separated to facilitate your eventual presentation of facts to your Commission:

(1) What is the practical, down-to-earth situation regarding your rate structure?

(2) What are the technical aspects of the rate problem which must be considered before you can intelligently present your problem to the Regulatory Body?

The process of rate making has many facets and it is impossible for you as an independent operator to be able to present intelligently and successfully all of the various angles in a manner that will assure you complete and successful attention by your Commission. You should, therefore, seek advice and counsel from qualified sources as a guide in preparing the information that will eventually be required by the staff of the commission so it can make a recommendation to the Commission.

"Pertinent Questions"

FOR YOUR GUIDANCE, there are listed, hereinafter, certain pertinent questions which you should ask yourself and with each question are some comments concerning the procedures you should follow in pre-

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This article was adapted from a report prepared by the Small Company Committee of the Missouri Telephone Association.

paring yourself for a rate proceeding from the practical, or down-to-earth side.

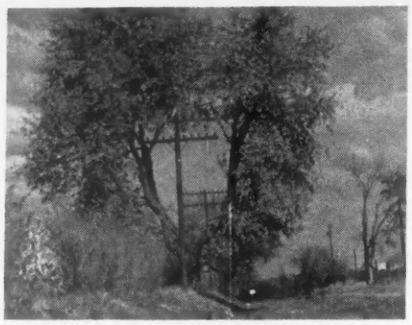
(A) How do your rates compare generally with rates being charged by other Independent companies of relatively the same size and generally in the same area?

There is no reason to believe that your rates can be made the same as a comparable Independent company as it has been clearly established that each company must stand on its own facts and necessities, but the matter of comparable rates should be considered before you attempt to request rates that are completely out of line, either lower or higher, than those of comparable companies. Your Association has complete information as to rates of other companies and the Commission files are open to you, or your representative, to determine what rates are being charged in Missouri.

(B) Have you fully informed your public of your problems and have you related these problems to the better service you can offer with increased rates?

Most of the opposition to rate increases stems from ignorance rather than from a desire on the part of your public to deny you the rates you need to properly operate your company. If you are frank in discussing your business, which after all is a public business, with your subscribers and potential subscribers, they will ordinarily be very happy to help you obtain a rate that will give you a fair return and enable you to render them a better standard of telephone service. It is much better for you to tell your public directly the problems and plans of your business rather than have them go to the public sources that are available to them and obtain the information themselves, and, in some cases, in a manner that does not fairly and accurately present the true facts. A well and accurately informed public is always an aid to your company rather than a detriment.

(C) Can you, or have you, maintained a good working arrangement with the city officials in your exchange or exchanges?



"How many of your everyday problems come from a poor rate structure?"

The same philosophy applies to your elected officials as it does to your general subscribers. If you will keep them informed of your progress, and if you will be frank in discussing with them the problems of the Telephone Industry, you will usually find they are perfectly willing to work with you to keep your rate structure at a level where their town will be receiving the best in telephone service.

(D) Do you keep your thinking clear concerning the use of the revenues you derive from your telephone operations, with particular reference to the portion of those revenues which are used to pay the operating expenses of your business, and the portion of the revenues that can be applied to the expansion or betterment of your plant?

Telephone rates are not devised to provide you with money specifically to build new plant. The rates are devised to provide you with money to meet the operating expenses of your company and to give you a fair return on your investment. You may take the return on your investment and apply it to the purchase of new and better telephone plant, but by no stretch of the imagination can your telephone rates be high enough to provide you with all you need when the demand for service is at such a high level as it has been for some years and is apparently continuing. Your thinking, therefore, must be directed to the problem first of obtaining sufficient revenues to meet your payrolls, taxes, and general expenses and secondly to obtaining for yourself, as an investor, a fair return. Keep clear in your mind that the fact that the cost of material has increased tremendously does not necessarily influence the rates you can charge to your public. Materials are purchased principally to be put in your plant as a permanent capital addition and as such this expenditure is not directly chargeable to your rate payer. Without a clear division in your mind of the type of expenditure you make in your telephone business you cannot intelligently consider the level of rates you should seek from your Commission.

(E) Are you prepared to tell the Commission of the type of service you render, whether such service is generally acceptable to your public, whether your operation is reasonably clear of complaints from your subscribers, and most particularly what plans you may have for further betterment of your service or expansion into a broader area or an improved type of service?

While rates are generally fixed based on the accounting or engineering facts, it is of extreme importance that your operation be as trouble free as possible so the rates can be granted without restriction and without conditions that the Commission may feel are necessary if you are not intelligently and properly rendering a grade of service to your public which they think is acceptable.

The foregoing questions, with comments, set forth the broad matters which you as the operator must consider before getting ready to submit a rate schedule to the Commission. You are the man in day-by-day contact with your subscribers and you alone can know the problems which exist in your telephone operation. The Commission, and your public, have a right to know how well you are operating your property and whether or not it is possible for you to further improve your telephone service. Whether your answers to the foregoing questions are favorable or unfavorable, the answers cannot be measured in dollars and cents but they do have weight, and certainly would be considered before the rates you request are granted.

Turning to the technical side of rate making, you can go to the Staff of your Commission and ask for assistance and guidance in preparing your rate presentation. The Staff is always prepared and willing to help you to every extent it can, but its members are not in a position to fully advise you as to what information should be presented. It is their real duty to evaluate the information when presented and to work with you from that point on until you achieve the rate increase to which you are entitled. In fairness to your Commission, and its Staff, you should obtain the help of qualified, professional people to assist you in preparing the data that is normally required in support of an application for an increase in rates.

Your only obligation in connection with the technical side of the rate proceeding is to maintain a reasonably accurate and detailed set of accounting records which can be used as a basis for preparing the financial statements that the Commission requires. This set of records should conform to the System of Accounts prescribed by your Commission and the records should be presented to your selected professional help so they can ascertain what support is available for the rate change you expect to propose.

In consultation with the professional help you have retained, you should work out a rate schedule which can be supported by technical facts as developed from your books and records, and, in all cases, the rates to be requested should be tempered by the answers which you can give to the practical questions outlined above. In connection with this work, you should take full advantage of the advice concerning your record keeping because the matter of rate changes is not a problem that can be solved today for all time to come. It is, in fact, a continuing proposition and, undoubtedly, you will be required to again go before your Commission for adjustment in rates within a very few years. In connection with any rate proceedings you should absorb all the experience you can for use in the proceedings which will undoubtedly be coming up time and time again in the future.

After your practical thinking, and after a review of your available records, a formal rate schedule

"It is of extreme importance that your operation be trouble-free."

should be prepared for filing with the Commission, together with a petition wherein is set forth the effect of the rates and any facts concerning the rates which may be unusual. There is certain basic information required by the Staff of the Commission in order that its members may evaluate the acceptability of your filed rates and, while this information is something that should be compiled by your technical help, it is listed below for your information.

(1) *A balance sheet of your company at a recent date.*

(2) *An operating statment covering twelve months of your operations ending on the date of your balance sheet.*

(3) *An operating statement showing the expected effect during the next* 12 *months of the proposed increase in rates and the expected increase in your operating expenses. This may be presented in the standard form of an operating statement or it may be presented in a manner wherein it shows the changes as applied to the operating statement you have submitted as being per your records.*

(4) *A statement of the number of stations you have in service at a recent date applied to your present rates and applied to your proposed rates by class of service so it can be determined what increase in exchange revenue you can expect from your proposed rates.*

There is nothing more exasperating than to be confronted with a set of financial statements which do not in themselves clearly portray all the details that are pertinent to the purpose to which the statements are prepared. It is, therefore, extremely important that whatever you present in a rate case should be carefully discussed with the Staff of your Commission and all of the questionable or argumentative portions of your statements should be clearly and adequately described or explained. There are many questionable details that can arise in your record keeping and all of them are expressed, in total, in the financial statements you prepare from the records. The Staff of your Commission is an experienced Staff and its members have handled most of the problems from time to time in connection with their work and experience as employes of your Commission. They have a right to be fully informed in regard to every item in your financial presentations and they should be particularly informed if you have any unusual accounting procedures or results in any of the filings you make with them.

As a practical telephone man, it cannot be expected for you to be able to sit down with a qualified accountant, or a qualified engineer, and discuss elaborately with him all of the technical accounting and engineering points he might raise. Such a duty should be placed upon your technical help and they should be able to work with the Staff of your Commission in such a manner that the Staff can agree that your presentation and support of your rate increase is fair and reasonable.

There will be cases where, for various reasons, the Commission will feel it is necessary to require formal hearings so that all facts in connection with your rate increase can be made a matter of formal public record, and you should assure yourself before seeking legal assistance that such technical assistance will extend to an experienced presentation of the facts of your case in a formal proceeding. All companies

have a right, if they do not like the decision of the Commission, to take their case into the courts for a ruling on the Commission's decision. This is a privilege in the law for your protection but, as a small company, it is practically impossible for you to afford the expense involved in trying to prove you are right. Your problem, therefore, reverts to making such a clear, concise, and acceptable showing before the Commission that its decision can only be the one that you anticipate.

Your Association is making every effort to make available to you the experience of other companies in rate proceedings, and they are also making available to you qualified, technical help that will permit you to go forward with a rate increase in any manner that is recognized by the Commission and in a manner that will prove successful in your case. You may feel the cost of obtaining a rate increase is prohibitive, but such certainly should not be the case. The costs of any rate proceeding are a part of the cost of your operation and, as such, are included in any statement of your operations which are submitted to the Commission. This does not mean that rate case costs can be inflated, for again your Association is carefully watching that only fair and reasonable charges are made for services rendered in connection with rate cases, or, for that matter, with any proceeding in the case of an Independent telephone company.

Sit down now and take stock of your own day-by-day problems and turn your thinking toward how many of those problems come from a poor rate structure. Seek advice from members of your Missouri Association District Small Company Committee and look to your Committee for recommendation as to where you can get preliminary advice in regard to your rates and the probability that you could petition the Commission for better rates. When you turn to the recommended source for advice in connection with rates, you have a right to expect from that source a fair and complete explanation of your position and a thorough analysis of what you have a right to expect in the way of consideration to your problem by the Commission. The entire matter has been made crystal clear in the case of many small companies and there is no reason why, in your case, the whole problem of rate making cannot be made crystal clear to you.—

THE END.

People Are Talking Farther and Longer

A LONG DISTANCE CALL is less of a novelty for the average person nowadays than it was a dozen years ago. Telephoning hundreds of miles to attend to personal matters, to handle business — or just to have a chat — is taken as a matter of course.

Not only is long distance telephoning more commonplace, but people are calling over greater distances and talking longer. Regardless of the distance involved, they are finding it a highly useful tool in conducting their business and social affairs.

The average haul for telephone messages handled over AT&T Long Lines facilities was somewhat less than 300 miles in 1941. During World War II it climbed above 400 miles. After a postwar decline, the upward trend resumed and the current level is close to the 450-mile mark.

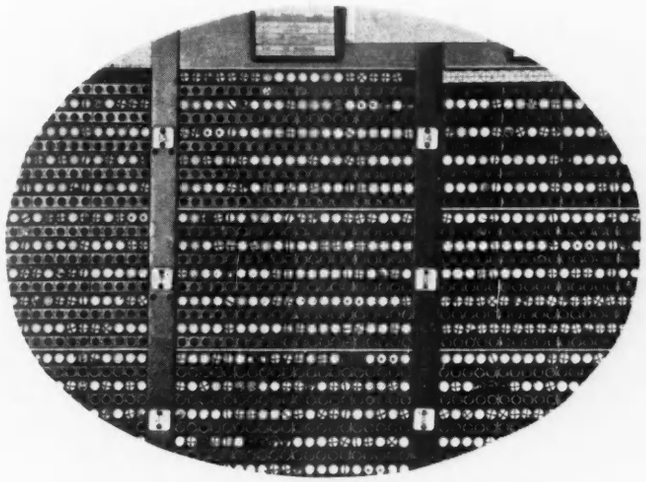
During World War II people from all over were serving in the Armed Forces. Before going overseas they telephoned home, and one of the first things they did on their return was to call home again. Meanwhile, those still in this country — but far from home — kept close to their families by telephone. Business calls, too, traveled over a wider range as the country concentrated on building for war. Reaching into all corners of the nation, long distance calls placed by service people, homefolks and businessmen began covering greater distances than ever before.

The moderate falling off in length of haul which occurred shortly after the end of the war was due in part to the fewer calls to and from Army camps and embarkation points. It soon started to increase again, for people all over the nation had become accustomed to the convenience of using long distance, and many of them had discovered that the longer haul calls did not cost as much as they thought.

Another factor which has helped encourage the public to talk over longer distances is the continuing development of transportation. Over the past few years, there have been many improvements in airline and railroad travel and in automobile and highway systems. These improvements, which have resulted in quicker, easier and more comfortable journeys, have induced people to do more traveling. The average American's conception of distance has altered, affecting his attitude toward telephoning over longer distances.

Long distance calling has annihilated distance and made neighbors of people separated by many miles. More than ever, the nation's telephone users are finding this service an economic and dependable aid in everyday living. Long distance is easy to use — it is a friendly, personal and satisfying method of communication.

THIS ARTICLE continues a helpful discussion of traffic department training routines which started in the May issue.



part three

Blueprint for a TRAFFIC FORCE

By RUTH E. RICHARDS*

HAVE YOU FELT that the task of training new employes was an impossible part of your work program? Then, here are tips on training that will give you a helping hand!

ONE-TWO, button your shoe, three-four, shut the door, and so on through the whole rhyme—(if you are more than a couple of dozen years old you probably played skip-the-rope to this old sing-song ditty.)

With *Part Three* of our traffic force blueprint we approach to the "shut the door" stage, that is, the windup of the initial training outline for a small office.

In *Part Two* (June issue of TELEPHONE ENGINEER & MANAGEMENT) we gave you as exhibits, "calls to be taught," "an index of drills," and a "drill outline." Reference to these exhibits is made in the day-to-day outline for the course.

In general it is expected that in a three or four-position office the training in combined operating will cover a period of 10 days. (Smaller offices may cover the applicable lessons in five or six days.) In offices that work a six-day week, the 11th and 12th days may be spent in commercial operating with a review of needed drills.

Suggested coverage of the training course is as follows:

FIRST DAY — Discuss and practice calls 1, 2, 3 and 4. Give drills 1, 2, 3, 4, 5, 6, 7 and 8. Listening introduction to operating and demonstration by instructor.

SECOND DAY — Discuss and practice calls 5, 6, 7, 8 and 9. Review calls 1-4. Give drills 9, 10 or 11, 10 or 12, review drills 1-8.

THIRD DAY — Discuss and practice calls 10, 11, 12 and 13. Review previous calls. Give drill 13. Review drills 2, 4, 10 or 11.

FOURTH DAY — Discuss and practice calls 14, 15 and 16. Review and Commercial operating. (One to two hours). Give drill 14. Review previous drills as needed.

FIFTH DAY — Discuss and practice calls 17, 18, 19 and 20. Commercial operating. (Two to three hours). Review previous drills as needed.

SIXTH DAY — Discuss and practice calls 21, 22, 23 if they apply, and 24. Commercial operating, 4 to 5 hours. Review previous drills.

SEVENTH DAY — Discuss and practice calls 25, 26, 27 and 28. Review call 16. Give drill 15, review previous drills as needed. Commercial oprating 3 - 5 hours.

EIGHTH DAY — Discuss and practice calls 29, 30, 31 and 32 (if they apply). Review previous drills as needed. Discuss peg counts, why and how taken and the need for accuracy. Commercial operating 3-5 hours.

NINTH DAY — Discuss and practice calls 33 and 34. Commercial operating with coaching on teamwork, overlapping and two-handed operation.

TENTH DAY — Discuss handling of telegram calls if this applies in your office. Review peg counts, review all toll calls, any needed drill. Commercial operating. Assignment of hours by chief operator.

In addition to the drills and demonstration of good cord handling, I like to dramatize the admonition to "handle the plug by the shell," by having the student examine a plug from which the shell has been removed. An "inside" view of the plug with the cord secured by tiny screws lends importance to the required practice. Likewise, a strip of jacks, if

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**Miss Richards is methods supervisor of the General Telephone Co. of Ill., Springfield. Her Traffic Department articles appear in each issue.*

Blueprint For A Traffic Force

(Continued From Page 43)

available, shows to the student how the springs grasp the exposed portion of the plug to make "talk" contact.

Voice Usage

GOOD VOICE usage is recognized as essential in telephone operating and any person selected for the work is not likely to have a defective voice. This outline will provide for the necessary voice instructions to meet the requirements of the individual student, but the instructor should remember the following points when she gives the instruction:

(1) There is no intention to make all voices the same; each girl's voice is individual to her and should remain so. If a student's speech is pleasant, expressive, and easy to understand, the instructor should avoid any attempt to make her change it. All students do not require the same amount of voice instruction and some will need little or none of it.

(2) Our inner feelings are reflected in our voices to a great extent. Drills on enunciation and inflection as well as prescribed attitudes of interest and courtesy will be wasted on an operator who is not courteously responsive to the changing situations in which she talks with customers and other employes.

(3) A special method is provided for passing numbers to other operators (B operators, toll operators, rural operators, etc.). Since most of these operators handle a great many calls speedily, it is a real contribution to accuracy and speed of service if all operators pass numbers in a uniform manner.

(4) Overemphasis reduces the effectiveness of voice usage and may produce an unfavorable impression — the very opposite of what is intended. Special care should be taken to avoid unnecessary exaggeration of enunciation and habitual attitudes of apology when not required. The important things in voice usage are naturalness, sincerity, and appropriateness. These convey to the customer personal interest in his service.

Pronunciation of Numerals

PRONOUNCE THE different numerals and party line letters as follows without, however, exaggerating the pronunciation given:—

Numeral or Letter	Pronunciation	Formation of Sounds
0	OH	With a long o.
1	WUN	With a strong W and N.
2	TOO	With a strong T and long oo.
3	TH-R-EE	With a single roll of the "R" and a long EE.
4	FO-WER	With a strong F, long O, W and R.
5	FI-YIV	With a strong F, long I and well sounded YIV.
6	SIKS	With a strong S and KS.
7	SEV-VEN	With a strong S and prolonged V and well sounded EN.
8	ATE	With a long A and strong T.
9	NI-YEN	With a first N strong, long I, and mild emphasis on the YEN.
10	TEN	With a strong T and N.
J	JAY	With a strong J and long AY.
M	EM	With a short E and strong M.
R	AHR	With a broad AH and strong R.
W	DUBBLE-YOO	With a full value given to each syllable.
F	EF	With a short E and strong F.
X	EKS	With a short E and strong KS.
Y	WI	With a strong W and a long I.

Pronunciation of Names and Numbers

IF BOTH AN office name and number are involved, give the office name first with a rising inflection. A similar rising inflection at the end of the number, as indicated by the question marks in the examples, is generally desirable as an aid in keeping the voice up so that the last syllables will not be lost.

Pause slightly between name and number where office numerals are not involved. If an office numeral is involved treat it as a part of the office name, thus "Jackson three? — *one two* — three four?" In the following rules, certain digits are marked to be emphasized and no pauses are indicated, as the natural pause following the emphasizing of a digit will be sufficient.

Pronounce each digit of the number separately except on an even hundred or thousand number, in accordance with the following rules.

(a) On a two-digit number, say for example:

44 Four four?
80 Eight oh?

(b) On a three-digit number, other than an even hundred, emphasize the hundreds digit. On a four-digit number, other than an even thousand, emphasize the first two digits.

136 *One* three six?
1478 *One four* seven eight?
2110 *Two one* one oh?
0004 *Oh oh* oh four?
0028 *Oh oh* two eight?

(c) On a number having a party line station designation, emphasize the last digit of the line number as well.

44-J Four *four* J?
236-W *Two* three *six* W?
4375-J *Four three* seven *five* J?
235-J-2 *Two* three *five* J two?
42-F-21 Four *two* F two one?

(d) On a five-digit number other than an even hundred or thousand, also emphasize the first digit.

10008 *One* oh *oh* oh eight?
5-1432 *Five* one *four* three two?
6-7542-J *Six* seven *five* four *two* J?

(e) On an even hundred or thousand, emphasize the digits as above when they are other than "O" but group all the zeros into their group name, two zeros being "hundred" and three, "thousand." For example:

300 *Three* hundred?
0300 *Oh three* hundred?
3000 *Three* thousand?
3100 *Three one* hundred?
10100 *One* oh *one* hundred?
32000 *Three two* thousand?
Highland 3-1234 Highland three? *one two* three four?
Cherry 8-1323 Cherry eight? *one three* two three?
Joliet 2-8329 Joliet two? *eight three* two nine?
Aurora 2-0114 Aurora two *oh one* one four

Drill No. 3 — Voice Usage

WHERE CONDUCTED — Away from switchboard.

MATERIAL REQUIRED — A small notebook for the student.

METHOD — Explain that the purpose of the drill is to say each digit and phrase distinctly with the pronounciation, inflection and tone prescribed for telephone work.

(1) Give pronounciation and telephone spelling of each digit. Have the student record the digits with their spelling for future reference.

(2) Drill on digits, endeavoring to develop correct pronounciation with speed.

(3) Explain method of repetition separating hundreds (stile strip) part of the number from the last two digits (jack number).

(4) Dictate numbers and have student record them for drill usage.

(5) Have student repeat back numbers for accuracy and repetition.

(6) Drill on correct voice usage on "Number please?" and "Thank you."

Give voice drill on numbers and phrases with each practice call. Be sure the student applies her knowledge of good voice usage to all her operating. Give careful attention to developing the student's confidence in her ability to perform the work and also habits of assurance, so that this confidence and assurance will be reflected in her voice usage.

Drill No. 4 — Multiple Drill

WHERE CONDUCTED — At the switchboard.

Have the student pick up the calling cord and indicate the location of the called line by touching the rim of the jack with the tip of the plug and then restore it to the socket. The next cord in rotation should be selected to indicate the next number.

Call the numbers so the student will be required to locate numbers left, right and center. Note that the cord is changed to the proper hand for left and right reaches.

Prepare lists for use in this drill using 2 and 3 digit numbers and party line numbers having station letters or rings.

After this drill has been practiced with a fair degree of speed and accuracy and Practice Call No. 6 has been taught, combine Drill No. 2 with Drill No. 4 and give the combined drills to student, one each day for the remainder of the training period. Include intercepted lines in the drill numbers and have operator explain the line or station condition when pointing out the line.

Be sure the student locates the multiple with the eye before reaching.

EXHIBIT NO. 4

Drill No. 2—Handling Equipment
Where conducted—At the switchboard

(1) Place key in talking position and then in normal position, using thumb and first finger. Operate keys at left of position with left hand and keys at right of position with right hand.

(2) Pick up cords from left, right and center of position. Use thumb and first finger forming an arch over the tip of the plug; second finger under plug and last three fingers drawn toward palm of hand.

(3) Place key in talking position and pick up cords simultaneously using both hands. Practice at both sides of position.

(4) Place key in talking position, pick up back cord, insert in unassigned answering jack and answer, "Number Please?" Announce a multiple direction (as, "left," "right" or "center"). Student will reach toward the direction called with the calling cord. Have student transfer cord to other hand if necessary. Restore calling cord, release answering cord using hand nearest cord, by raising cord slightly with last two fingers.

Drill No. 5 — Ringing Drill

WHERE CONDUCTED — At the switchboard.

(1) Demonstrate a 2-second ring by counting "one second, two seconds" deliberately. Explain proper spacing of rings in accordance with the drill you are about to give. Use an office telephone so rings can be heard for this demonstration. Allow student to ring 2-second ring and a few code rings on this telephone.

(2) Use a dead jack and call out various code ring combinations to the operator and observe the timing and spacing of the rings. Also observe that the thumb and the first finger are used for ringing. (with cam type keys).

Where master harmonic ringing keys are provided, note whether the operator restores the ringing key to normal after each ring.

Drill No. 6 — Memory Drill

WHERE CONDUCTED — Away from switchboard.

MATERIAL REQUIRED — Scratch paper and pencil for student.

(1) The instructor will have prepared lists of telephone numbers for use in this drill. One number at a time will be given the students. A list of about 30 numbers will be given. After each number the student will wait about 10 seconds and then write down the number. After the numbers have all been given, the student will read them back for accuracy. Check also for voice expression and enunciation.

(2) Conduct drill as above with the following exception: Two numbers will be given, one right after the other, the student will wait 10 seconds and then write down the second number.

(3) Same as above except that the student will write the first number.

(4) Same as 2 except that the choice of number to be recorded will be varied.

Drill No. 7 — Observation and Discussion

WHERE CONDUCTED — At the switchboard.

MATERIAL NEEDED — Scratch paper and pencil for student.

METHOD — Have student listen with the instructor or an expert operator. Instruct her to record the telephone numbers or orders she hears.

(1) At the conclusion of this observation period discuss the points of operating heard, checking the accuracy of the operator's observations and clearing up misunderstandings.

(2) About one-half hour at a time is sufficient for this drill. During discussion, discuss points of operating with the student which have been previously taught and which the student seems in doubt about. However, do not dwell on unusual types of calls which have not yet been taught.

(3) Discontinue this drill in accordance with the instructor's

judgment as to the student's requirements; usually after the operator starts commercial operating.

Drill No. 8 — Distant Place Drill

WHERE CONDUCTED — Away from the switchboard.

MATERIAL REQUIRED — Blank OUT tickets and pencil. List of distant points and their authorized abbreviations, if any.

The purpose of this drill is to translate the names of places into authorized abbreviations and vice versa and to pronounce the names correctly and distinctly.

(1) The names of direct circuit points should be taught first, the names pronounced and their abbreviations given, if any are authorized. The student should be asked to write the abbreviations in the "To" space on the ticket, the instructor giving the name of the place and the correct abbreviation. If no abbreviation is authorized, the name should be written in full.

(2) The student will then give the name of the called place by spelling the abbreviation she has written on the tickets, and then giving the name. And if the name was written in full, spelling and pronouncing it.

(3) A new set of tickets should be given the student and the instructor will give the name of the place and the student write either the abbreviation or the name in full.

Note: Preceding the lesson on built up circuits the drill should be of built up circuit points and their abbreviations.

Drill No. 9 — Abbreviation Drill

WHERE CONDUCTED — Away from the switchboard.

MATERIAL REQUIRED — Paper and pencil for student. List of frequently used abbreviations. These will include codes used for reports and abbreviations frequently used. See Exhibit 5.

(1) Spell the abbreviation to the student and give the meaning. The student will write the abbreviation or code only.

(2) After the student has written the abbreviation, have her, beginning with the first one dictated, spell the abbreviation and give the meaning.

EXHIBIT NO. 5— Use of Codes

Codes are provided to make it easier to pass reports and write them on tickets. Following are the most commonly used authorized codes to be used in passing reports to other operating employes and in writing reports on tickets:

Code	Definition
ab	Anyone who can talk business
ag	Try again
ay	Anyone
bnr	Messenger not returned
by	The line is busy
ca	Cancel
cf	Cannot find
cto	Cut-off
da	Telephone does not answer
ds	Telephone disconnected
fc	Find called or calling party
lf	Left telephone
lk	Looking for party
lw	Leave word
mg	Messenger
MS	Mobile service
N	night — used to designate a reduced rate
nc	No circuit available
nf	No telephone listed
nrg	Not registered at address name or called number
od	Out of order
OTC	Originating toll center
p	Person to person. Used to classify a completed personal call at full rates.
pn	Party notified to come to the telephone. Also to classify a person call at reduced rates.
po	Postpayment coin station
pre	Prepayment coin station
rd	Ringdown
sf	A tributary office reached over straight forward trunks at the TTC by dialing.
T	In ticket required
TC	Toll center
td	Temporarily disconnected
tlk	Talk or talking
TTC	Terminating toll center
TX	Outward operator at a delayed call position
u	Expected at (or/in) (time)
ud	Do not know wether the called party will be there today—ud prefixed to "tomorrow" or "given day" means not expected today and do not know wether he will be there tomorrow or (given day).
un	Unknown
ux	Not expected today and do not know when he will be there
wh	We have, or ready with line or party
wno	Wrong number
wt	Will talk

Abbreviations and codes should be used in succeeding drills to correspond with the calls being taught so that only a certain number are given with each drill and the student is not required to learn too many at a time.

*This list will include locally authorized abbreviations for frequently called places as well as such common business abbreviations as:

agent — agt.
apartment — apt.
avenue — av.
boulevard — blvd.
government — govt.

Expecially applicable to toll ticket usage are such abbr. as:

called — cld.
calling — clg.
charge or — chg.
change
Chief Operator — C.O.
circuit — ckt.
collect — col.
conversation — conv.
correct — ok
minutes — mins.
operator — opr.
passed — psd.

Drill No. 10 — Reading Clock Time Drill

(For use at offices in which calculagraphs are not provided.)

WHERE CONDUCTED — At the switchboard.

MATERIAL REQUIRED — Blank OUT toll tickets and pencil.

Explain the spaces on the ticket for entering the start and finish of conversations. Also explain the method of reading the clock (Some

timing clocks show tenths of minutes and some show seconds.) Emphasize the importance of noting the exact time of the start of conversation and also the end of conversation.

(1) Drill the student by having her note the start of conversation when requested by the instructor and place the ticket in the spiral ticket holder. After three tickets have been placed in the ticket holder, the instructor will tell the student to remove the first and enter the disconnect time.

(2) The student will compute the elapsed time and file the ticket. The same procedure will follow with the remaining two tickets.

(3) Repeat this drill as often as necessary to insure that the student understands and attains efficiency in reading the time.

Drill No. 11 — Stamping Ticket Drill

(For offices having calculagraphs)

WHERE CONDUCTED — At the switchboard.

MATERIAL REQUIRED — Blank tickets.

The purpose of this drill is to develop skill in stamping tickets.

(1) Have the student take a blank ticket and place it in the calculagraph, stamp the start of conversation, and place ticket in the spiral ticket holder.

(2) When the student has stamped the start of conversation on three or four tickets, have her stamp the finish of conversation on each in turn and file it in a blank ticket compartment, if one is available or lay them aside on the key-shelf bulletin.

(3) Drill specifically to avoid faulty stamping.

(4) As this drill will be given a number of times during the student's training period have her sit both to the left and right of the calculagraph during the various drills so that she will become adept at using the calculagraph with both the left and right hands.

Drill No. 12 — Reading Time Drill

(For offices having calculagraphs)

WHERE CONDUCTED — Away from the switchboard.

The GOOD instructor observes the student, analyzes her mistakes and explains how the mistakes can be avoided.

MATERIAL REQUIRED — The tickets stamped during Drill No. 11.

The purpose of this drill is to train the student to read calculagraph stamps accurately and quickly.

Discuss the proper method of reading the calculagraph stamp.

(1) Reading the time of day of the start of conversation.

(2) Reading the minute dial.

(3) Reading the second dial (or the 5 minute dial).

(4) Combining the readings of the elapsed time dials.

(5) Make sure the student understands how to read stamps by reviewing a few with her.

(6) Explain how the elapsed time should be entered on the ticket.

(7) Using the tickets the student stamped in Drill 11, ask her to read the elapsed time and enter it in the proper space on the tickets.

(8) Analyze mistakes and explain to the student how these mistakes can be avoided.

Drill No. 13 — Toll Circuit Multiple Drill

WHERE CONDUCTED — At the switchboard.

The purpose of this drill is to develop accuracy and speed in locating toll circuits.

(1) Have the student seated at the switchboard.

(2) Call out the name of toll circuit groups.

(3) Have the student indicate the location of the first idle circuit in the group by touching the rim of the jack with the tip of a plug. In combined offices where it is the practice to reserve the cords at the end of the position for toll calls the plug used in locating the circuits should be selected from these cords.

(4) Observe the student, analyze her mistakes and explain how these mistakes can be avoided.

(5) Repeat groups which seem difficult for the student to locate until the difficulty disappears.

EDITOR'S NOTE:—*Part One of "Blueprint For A Traffic Force" appeared in the May issue of* TELEPHONE ENGINEER & MANAGEMENT. *Part Two appeared in the June issue. Part Four will be published in the Aug. issue of* FORTNIGHTLY TELEPHONE ENGINEER.

Reducing

ACCIDENT COSTS *through* SAFETY COMMITTEES

ALTHOUGH management bears the basic responsibility for establishing, promoting, and enforcing plant safety, the very nature of the project requires a cooperative effort by management and employes. Obviously, without the cooperation of the employes, management can go only so far in the conduct of a safety program. For their part, employes are limited in their safety activities by the provisions and desires of management. The only fully effective form of safety program, as shown by actual industrial experience, is one in which management and employes coordinate their thinking, experience, and abilities to achieve production *with* safety.

However, management must take the initiative and establish an organization through which ideas and suggestions may flow. Industry has found the "Safety Committee" very effective for this purpose. The scope of activities, size, and membership of safety committees vary from plant to plant, from industry to industry. But the basic principle remains the same — management and employes working together on a definite cooperative basis to prevent accidents.

Membership and guidance of Safety Committees

COMMITTEES vary widely as to size. While a small committee can cover only a limited territory or scope, a committee which is too large is unwieldy and slow in producing results. If a large committee is required in a particular plant, a small governing committee and several subcommittees may be used, in this way overcoming, to some extent, the disadvantage of large size.

In small organizations, the safety committee may be composed of two or three foremen whose work schedules allow specific periods in which they inspect the plant and meet to discuss safety conditions. No other duties should interfere with this activity.

While the safety committee's duties are generally of an advisory nature, it is often found practical to delegate to such members as the plant engineer or supervisor, the authority to correct unsafe conditions immediately where necessary. In plants in which the manager serves as committee chairman, prompt action on commitee recommendations is assured.

When the worker viewpoint and "firing line" experience is desired, the membership of the safety committee can be expanded to include nonsupervisory workers. Members of the safety committee should be chosen to represent the various departments or crafts, since a cross-section of contacts and experiences is needed to bring in varied viewpoints and to give a complete understanding of the job to be done. In some companies, committee members are rotated every few months or annually

to give as many workers as possible a chance to find out how the committee operates and to make them more safety-minded. Other companies use the same members from year to year, believing that members become more valuable as their experience increases.

Once the number of members and the departments or crafts which they are to represent have been decided upon, an over-all policy should be drafted as a guide for the committee. The policy should cover the range of the committee's activities, the degree and scope of its responsibilities, and the limits of its powers. Every employe should be informed of the policy.

What Precautions are Necessary?

TWO HANDICAPS which can seriously impair the committee's work must be guarded against. The first is in regard to the procedure for handling safety recommendations. When recommendations submitted by workers or safety committee members in good faith are allowed to be tossed in the waste basket, ignored, or not properly followed up, the safety program is on the way to failure. An employe who submits a recommendation wants to know that the comimttee acted upon it and that the management took suitable action promptly. In appreciation of the employe's efforts, he should be notified of receipt of the recommendation and of the action taken on it. This type of procedure leads to additional recommendations and cooperation.

The second cause of safety committee failure is lack of something worth while to do. Without a definite program of activities in which committee members may participate, a committee becomes stagnant—members lose interest, the safety movement becomes a farce, and there are few, if any, benefits. New safety committees do not know what they are expected to do or how they should do it and must be guided, trained, and inspired. Old committees get bored with the same old routine and need new ideas and suggestions.

Functions of Safety Committees

HERE ARE some safety committee "What To Do's":

(1) *Meet regularly.* The holding of regularly scheduled safety meetings gives committee members an opportunity to discuss hazards and ways to correct them, accident frequency rates, injuries that have occurred, recommendations and program plans. A well-organized meeting is the common ground on which workers and management make their reports and arrive at decisions.

(2) *Inspect the plant regularly.* Regular inspections of the plant make possible early discovery of hazardous conditions which have developed or which may develop. Further, supervisors and workers, knowing that regular inspections are being made, will strive to eliminate conditions which might be criticized by the committee.

(3) *Investigate accidents.* Accidents result from failures — mechanical or human. When an accident occurs, the safety committee should investigate carefully in order to find and correct the cause. By taking part in accident investigations, members of the safety committee become acquainted with the conditions and actions which lead to accidents and resulting injuries. This experience helps them to make more valuable recommendations. Also, the combined efforts of a committee may bring to light important items which would otherwise be overlooked.

(4) *Develop accident data.* By compiling and analyzing accident reports, the safety committee can determine how many injuries occurred, where they occurred, and what the main causes were. It can use this information to determine which phases of the safety program need to be emphasized or modified.

(5) *Develop safe work methods and rules.* With their "firing line" experience as a background, safety committee members can be of valuable assistance in developing safety rules and safe work methods. As operating changes are made, new equipment added, or new processes developed, the committee can revise and add to these methods and rules to keep the safety program abreast of operations.

(6) *Sponsor safety and first-aid training.* Safety and first-aid training not only give workers and supervisors an opportunity to learn more about these subjects, but also are an excellent means of arousing and maintaining their interest in them.

(7) *See that adequate first-aid facilities are available.* In addition to sponsoring first-aid training, the committee should see to it that the company has a centrally located first-aid station, even if the size of the plant warrants only a box or locker of bandages, antiseptics, and other supplies, rather than a separate, well-equipped room. The committee should make certain that responsibility for maintaining the first-aid station has been clearly assigned to some one employe, and that workers obtain first-aid treatment whenever they suffer injuries, however slight. Presence of a first-aid station where the workers will see it daily also will help to make them more safety conscious.

(8) *Advertise safety.* A good part of safety is selling, and the salesman must be backed up with appropriate advertising. Use of bulletins, posters and word-of-mouth advertising will help the safety committee to make the other workers safety-minded. The most important requirements for good safety advertising are ingenuity and enthusiasm.

(9) *Plan special features.* By featuring one phase of accident prevention each month, the committee can concentrate its efforts and sell one idea at a time. Good housekeeping; safely kept floors and aisles; correction of machine hazards; use of goggles; safe use of hand tools, and correct ways to handle materials are excellent subjects for this type of plan. By setting up a schedule for six months at a time, the committee can plan carefully, in advance, how it will stress each phase of accident prevention, month by month.

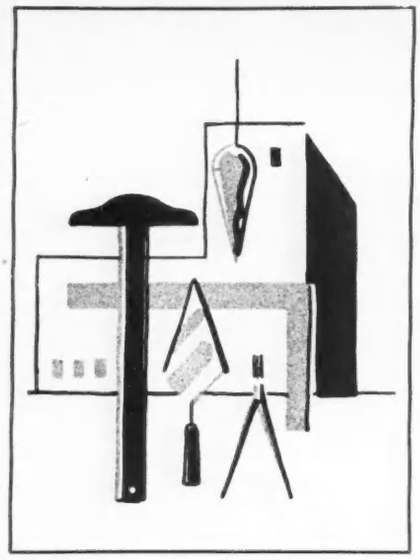
Benefits to Both Management and Labor

INVESTMENT in safety pays dividends to all groups concerned. The safety committee is the guardian of the investment. The dividends are actual money savings to management and workers.

Management benefits by: less production time lost; less spoilage of materials and machines; less worker replacement time and cost; less labor turnover, and lower premiums on workmen's compensation insurance.

Workers benefit by: regularity of income (rather than compensation); fewer injuries and less worry, and greater satisfaction in their work.

—Adapated from a report issued by the Small Defense Plants Administration.



A monthly report on -

NEW EQUIPMENT *and* NEW METHODS

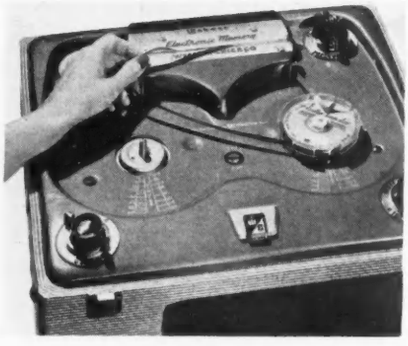
New microwave antenna resembles the cornucopia or "horn of plenty" . . . New device converts sun's energy into electricity . . . New derrick storage kit.

Simplified Message Repeating Device

A NEW APPROACH to the designing of automatic telephone answering equipment has been made possible by a simplified, automatic message-repeating device developed by B. A. Cousino, of Cousino, Inc., 2328 Madison Ave., Toledo 2, Ohio.

The Universal "300" Audio-Vendor embodies a reel and magazine which holds magnetic tape for a running time of from 15 seconds to 15 minutes.

Weather reports or messages advising telephone users of dialing mistakes or changes in prefixes and numbers can be recorded on the continuous tape. Special circuits can be set up so that telephone personnel can call in any hour of the day or night for latest instructions regarding telephone emergencies or other messages.



The Universal "300" Audio-Vendor can be placed driectly on the supply spindle of any tape recorder.

The Universal can be placed directly on the supply spindle of any tape recorder, requires no adjustment, is entirely self-compensating and trouble-free. The tape comes from the center of the magazine and is retrieved and automatically rewound on the outside after recording and at the exact required uniform tension and speed to avoid any excess in the loop.

New messages, as recorded, automatically wipe old messages from the tape. Latest recordings are perfectly reproduced continuously until replaced.

Tel-E-Lect's Derrick Storage Kit.

New Derrick Storage Kit

ANYONE WHO has ever set up an "A" frame derrick will welcome the announcement of Tel-E-Lect Company's patented derrick storage kit which fits any standard utility truck body and derrick to enable the operator in the truck cab to erect or store the derrick away.

Instead of the usual tedious job of assembling the "A" frame, along with the back-breaking work of mounting it on the truck, the manufacturer states that the storage kit will set it up or take it down in a minute or less. In addition, the system provides more body space for storing other items.

The kit is a simple assembly that can be quickly bolted to the rear of your truck by your local mechanic. It attaches to any standard utility body without further modification.

Working with a double drum winch, the kit allows live boom operation, or as a fixed boom with a single drum winch. According to the manufacturer, the cost is only a fraction of other derrick storing systems.

Energy From The Sun

WHILE PUBLIC attention has been centered on such matters as the Indo-China war and whether Sen. McCarthy is one or isn't, an event has oc-

curred that will be of importance long after those sensations have been forgotten. Men have, for the first time, contrived a device to convert the sun's energy, directly and efficiently, into electricity. This achievement took place at the Bell Telephone Laboratories, at Murray Hill, N. J., whose scientists have been responsible for many other epochal discoveries, including the transistor, a tiny, inexpensive and enduring contrivance that does the work of a vacuum tube.

The new solar battery employs paper-thin strips of a silicon alloy which seems to have the property of converting the sun's rays directly into electrical energy. Its efficiency is rated at 6 per cent, which compares favorably with that of engines which consume coal. Since it has no moving parts and nothing is consumed, the battery should last indefinitely. The sun pours uncounted trillions of kilowatt hours of energy on the earth every day. Some method of harnessing this power has been among the persistent searches of science.

The first solar battery delivers only a small amount of current, but the engineers are confident that this will be greatly improved. Its possible uses are infinite, and it comes at an opportune time to hearten all who may fear that little is happening to indicate that men are using their brains and skill in a manner worthy of their proud estate.

New Miniaturized Carrier

A NEW miniaturized carrier telephone system to multiplex up to 48 telephone channels for transmission over suitable wide-band microwave equipment is now available from Lenkurt Electric Co., San Carlos, Calif. The manufacturer claims this new system, designated Type 45BX, provides the largest number of channels economically available as a standard equipment arrangement at this time.

The system is particularly recommended for radio circuit application where groups of 12 to 48 channels are required, where future expansion is planned, or where it is desirable to extend groups of channels beyond the radio terminals over Lenkurt 45-class land-line carrier systems.

Type 45BX is one of several 45-class systems using identical basic channel terminal equipment to provide economical multi-channel communication service over wire lines, cable, or radio circuits. Groups of 4 or 12 channels can be interconnected among these systems at carrier frequencies, thus eliminating the transmission degradation and equipment investment which would be unavoidable if voice frequency connections were used at junctions of the various transmission media.

New, miniaturized carrier telephone system to multiplex up to 48 telephone channels for transmission over suitable wide-band microwave equipment is now available.

Using standard single-sideband, suppressed carrier operation, the 45BX system makes maximum use of frequency spectrum with minimum loading of radio equipment. Equipment crosstalk, noise, and level stability are well within standards established for toll network links. Optional compandors can be furnished to provide up to 22 db additional margin if required by propagation considerations.

Detailed engineering and applications information on Lenkurt Type 45BX carrier telephone equipment is available on request from Automatic Electric Sales Corp., 1033 West Van Buren St., Chicago, Ill.

Microwave "Horn of Plenty"

A NEW TYPE of antenna — a tapering horn resmbling a cornucopia or "horn of plenty" — will be installed on all new main or backbone radio relay routes beginning some time this fall, and will ultimately replace many of the TD2 types now in use on existing Bell System routes. The proposed microwave system between Jackson, Miss. and Dallas, Tex. will be one of the first to use the new antenna.

Called the horn-reflector, the new model will further carry out its resemblance to a cornucopia by providing much greater capacity for handling telephone messages and TV programs than the present antenna. Whereas the latter was designed to transmit and receive in one band of frequencies, the horn-reflector is designed for simultaneous use in three bands. This improvement permits the antenna to accommodate additional channels when increased facilities are required. Another advantage is its ability to handle both vertically and horizontally polarized waves — instead of only vertically polarized waves like the present antenna. The use of both polarizations makes closer channel spacing, thus increasing the potential capacity of the radio system and also reducing certain types of interference.

While the existing antenna includes a lens for focusing the incoming or outgoing signal, the new model uses another method. The upper surface at the top of the horn is shaped as a parabolic reflector, and the beams are focused by its curve — as is the case in such devices as automobile headlights or searchlights.

A new type of wave guide has also been introduced with the horn antenna. Circular in cross-section instead of rectangular, it has about half the transmission loss of units now in use.

Shockless Blanket

MOST PEOPLE think of wood as a non-conductor of electricity — an insulation, in other words. But experience has proven that telephone poles can conduct deadly amounts of voltage when contacting high tension power lines — especially when the poles are damp or when their preservative treatment has not thoroughly dried.

It is often necessary to place, move or remove telephone poles near high voltage electrical wires. In these instances, linemen protect themselves from electrical shock by wrapping the upper part of a telephone pole with one or more heavy rubber blankets. About $\frac{1}{8}$ inch thick and three feet square, they regularly are tested, cleaned and examined for defects.

A MONTHLY feature presenting condensations of addresses made by telephone industry leaders at association meetings and conventions on subjects dealing with current developments and management problems.

Top Management Reports

Selling . . . .

■ FOR QUITE A FEW years we have concentrated our efforts on expanding our plants and extending facilities to meet what seemed to be a never-ending demand for telephone service. Those in the telephone company who meet the public everyday have been looking forward to the time when we would be caught up and there would be no such things as "held orders," "held applications," or "deferred installs." Many of our Independent companies have reached the point where they have no held applications and no requests for upgrades in service, and other companies can see where they will reach this point within the very near future.

L. F. Shepherd
Erie, Pa.

In a few areas of Pennsylvania the telephone industry is beginning to feel the effects of an economic change. The number of service terminations exceed the number of applications for service, and there is a greater number of service terminations because of non-payment. To some of the younger people in the business this economic change is a new experience, but to some of the older people, and more particularly to those who were in the telephone business during the period from 1930 to 1933, this economic adjustment has a somewhat different significance. I hasten to add, however, that I do not believe we are plunging into a great business depression. There is plenty of evidence to indicate that the year 1954 will be about as good as 1953 for most lines of business. I believe the present economic adjustment was inevitable—it is spotty, and it is hoped it will help to control some of the factors contributing to inflation.

Ever since the beginning of World War II we have had demands for telephone service made upon us which have exceeded our capacities. Because our efforts have been devoted primarily to getting caught up on the backlog of requests for initial service, I am quite sure that many of us have neglected studying the service requirements of our older customers. You know, a customer's service requirements do change. How long is it since a representative of your company has called on, say, each of your company's ten largest customers at a given exchange, to inquire into the adequacy of his present telephone facilities, or to find out if his service is satisfactory?

Don't you agree that this would be a good thing to do at regular intervals? You may be surprised to learn that the business of some of

your customers has increased substantially — that the service and facilities serving a number of them is now inadequate and should be enlarged or modernized.

I believe it is a good plan for telephone representatives, as a matter of policy, to continuously expose themselves to their customers. I suspect there are quite a few of your customers who would welcome a personal call from a representative of the telephone company — I mean, of course, someone other than the installer-repairman who in the performance of his work is of necessity required to call at the customer's premises to do certain installations and repair work. I am referring to your commercial department and management personnel, and if yours is a small company — that person may be you.

Too many times the customer is neglected. Left to work out his own communication problems. I think it is our duty and obligation to recommend the quantity, type and kind of facilities and services best suited to meet the customers' requirements. We must sell, and customer contacts this made are splendid public relations media. There's a pretty good chance such contacts will make the customer a little more friendly toward the telephone company — he will be better satisfied with the service your company provides and additional revenue will accrue to the telephone company.

There is no substitution for good and dependable telephone service— and don't forget that the customer is the judge, and in some instances he is also the jury. Most customers have a pretty good idea as to what they consider to be good telephone service. In all my years in the business I have never encountered a complaining customer who couldn't develop the logic of his complaint. I believe we should give a little more attention to providing the services and facilities the customer wants, rather than just those we have available, or the type and kind we determine are the most profitable from our point of view. It is assumed, of course, that your rate structures are such that your company can make a reasonable profit on its over-all operations.

Selling must extend beyond just the sale of new or additional facilities and services. Selling must include selling the company and what the company is doing or what it plans to do to maintain, improve or modernize service. Most of our customers know very little about the operations of our business. So, I recommend that you never pass up the opportunity to get your customers to go through the telephone exchange building, to inspect the equipment, and to become acquainted with people at the telephone office. When it comes to selling the company to its customers, and also when selling additional service and facilities, the employes of any telephone company constitute a well qualified sales force. It is almost certain the sales result of the company's employes will be measured to a great degree by the sales attitudes of the management of the Company. If the boss doesn't sell his company to the employes, you can be pretty sure the employes won't do much selling of the company to the customers. I have observed that a well-informed employe group, who are meeting the customers and public everyday, can accomplish a great deal in selling service and maintaining good public relations.—(*Adapted from an address at the* 1954 *convention of the Pennsylvania Independent Telephone Association.*)

"Change . . ."

THERE USED to be an Army proverb — that nothing is so certain as change. I think this applies to our business, too. Historians tell us to look backward to forecast the future. Doing so we not only see the certainty of change but also the accelerating rate of change. Looking ahead I think there are many changes to come. Most will be welcome — all will be challenging. These changes will come about because no telephone company has any reason for existence except to discharge its obligation to render an essential service to its public. I do not for one instant divorce this obligation from that to its stockholders and employes for profits and fair wages. Profits and fair wages are important elements in the successful application of the formula for service.

H. H. WAGNER, president of the Prattsburgh (N. Y.) Tel. Co.

These obligations cannot be discharged while at the same time ignoring the effects of economic forces — the satisfaction of the need to find more economical ways of doing things. This force has brought about the dial conversion era. To fully recognize this as an economic force, it is only necessary to look at the NYSTA statistical summary and transfer the traffic expense item to net before taxes in just about any company not yet converted.

Carrier itself is relatively old, yet short haul carrier was considered a big step forward. Now we have rural carrier for subscriber exchange service. Only a few weeks ago, a symposium on carrier problems was held in Washington by the REA at which it was estimated that the dollar value of carrier systems of all types now in use probably represents only 10 percent of what is likely to be in use.

Rapid strides have been made in microwave adaptation. Today few Class C or even B companies have economically feasible applications for microwave systems. But we cannot disregard this tool. We must be alert to its further development. Who can say that microwave will not follow in the footsteps of carrier from long haul to short haul and even to exchange service?

It hardly seems necessary to even mention inter-toll dialing. It is so inevitable that it is difficult for me to conceive of any company which is not preparing for it. Treading on the heels of inter-toll dialing, is automatic toll ticketing. Basically a mechanization of a part of the commercial function, its equipment is a plant item and our maintenance men will have to install it, maintain it and understand it.

Accompanying inter-toll dialing, if not preceding it, is extended area service. Still another outcropping of our integrated character is the greater coordination of equipment requirements and designs with those of neighboring companies which extended area service requires.

All these technical tools cost money and considerable amounts of it. Small companies will have big investments. No one is likely to confuse future money needs with yesterdays'. The day is gone when it was possible to

Please Turn to Page 56

How to win friends and influence subscribers

GIVE BETTER TRANSMISSION

They may not exactly swoon in your arms. But . . . your subscribers will surely tell you how much they appreciate the life-like talking qualities of this new Leich 700 telephone.

It's the new short handset that does it. By placing the transmitter much closer to the user's mouth, it gives you transmission gains up to 5 decibels.

FURNISH A BEAUTIFUL TELEPHONE WITH MODERN FEATURES

You never knew you were so smart! That's how you'll feel when you install the first few Leich 700's. Let your customers tell you how they like the sleek, slim lines, the easy-to-read extended dial ring, the handy liftplate. You can't blame them if they want THIS phone in the parlor.

LEICH

GIVE THEM THEIR CHOICE OF WALL OR DESK INSTALLATION

You and your installers will really appreciate this exclusive Leich feature. Even when the lady says that—on second thought she'd rather have a wall telephone — you can just smile and install this same instrument as a wall model. You save on inventory too, because you need to carry only one type telephone.

GIVE THEM THE MOST DEPENDABLE TELEPHONE YOU CAN FIND

Long after the newness wears off, you can expect favorable comment on the dependable performance of your Leich 700 telephone. It took years to design this instrument. The circuit has been thoroughly proved. The telephone is carefully assembled and tested in our modern factory. You'll profit from this dependability, because you'll have to make fewer maintenance trips than you ever dared hope for.

The new Leich 700

MANUFACTURERS OF TELEPHONES, SWITCHBOARDS AND RELATED APPARATUS SINCE 1907

LEICH SALES CORPORATION, 427 W. RANDOLPH STREET, CHICAGO 6, ILLINOIS

PACIFIC COAST: 2611 SAWTELLE BLVD., LOS ANGELES 64, CALIF. SOUTHWEST: 1227 SLOCUM ST., DALLAS 7, TEXAS

GENERAL TELEPHONE SYSTEM

Top Management Reports

(Concluded from page 53)

lean over the counter and sign a note to buy a new switchboard. The small country bank is limited in its lending capacity. It is doubtful if it can lend the money to buy more than the station equipment alone. But, while the small telephone companies' needs are constantly expanding, so have the financial facilities available to it.

With better technical means with which to serve our customers, we must more aggressively anticipate our customers' wants and needs. Ours is a technical business. We cannot expect our customers to tell us how to apply these means. It is up to us to study our customers' problems and sell them facilities which will help them transact their business or enjoy a fuller social life. When we satisfy those needs, they are more than willing to pay for the services received. I have yet to experience a complaint about charges if the service has been satisfactory. The demand is for more service at even higher charges.

The distinct trend of people moving from the city to the country brings problems with it. Electric company men and road supervisors tell me that this seems to be a very real trend. The magnitude of its effect on the small company is not yet foreseeable but it is inevitable that these people, having been accustomed to city service, will demand its equivalent from us.

But what of administration? Records, records and yet more records will be required. First of all, no lender will lend money unless he knows more about your business than you do and he will best gain that knowledge from your records. He will know what kind of management you have from the records you keep. Nor can we expect much, if any, simplicity in tax structures or the reports accompanying them.

This greater administrative burden can simply be interpreted that greater care will be required in the selection and training of office employes and inevitably in their being more valuable to you and to your company. No longer will an operator with a little time to spare be able to do this job. The small company, wishing to attract and keep valuable employes, must in turn compete with other employers both as to wages and other benefits, such as pensions, profit-sharing plans, etc., which in turn add to the administrative burden.

Certainly the small company manager is going to devote a full measure of his time to this, his chosen field. He cannot, perhaps, be completely skilled in all the problems with which he will be confronted, but he can seek advice. With this advice and his vigorous use of his power of decision, he can solve them well.

But what about rewards? The management and the employes will have the satisfaction of fully utilizing their abilities and skills to provide better service and being well rewarded for it. The management and the stockholders should have the satisfaction of good and reasonable earnings. The subscribers will have the satisfaction of the service they want.

To sum up the answer to what is ahead, we can say there are multitudes of problems and the small company manager needs to be informed, alert and aggressive. He needs to surround himself with competent and appreciated help. To borrow from an advertisement "the future belongs to those who plan for it," and for them the future ahead is good.—(*Adapted from a paper presented at the* 1954 *convention of the New York State Telephone Association by Herman W. Wagner, Prattsburg, N. Y.*)

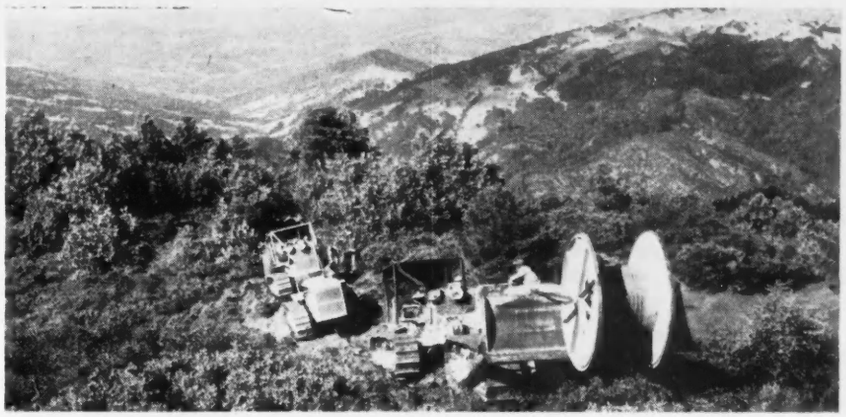
Book Review

"Preparing For the Public Utility Rate Case," by Francis X. Welch. Published by Public Utilities Reports, Inc., Washington, D.C. 330 *pages. Price* $10.00.

THE VERY IDEA of reducing practical instructions on the preparation for a public utility rate case to a book form is certainly a challenging one. That is the task which Francis X. Welch, editor of *Public Utilities Fortnightly*, and well-known writer on the subject of public utility regulation, sets out to do in his recently published volume, *Preparing for the Public Utility Rate Case.* Apparently, this is the first time this subject has been approached in this form.

Mr. Welch's new book deals entirely with the various phases of preparation. It is to be followed by a companion volume dealing with the actual conduct of the trial of a public utility rate case before the regulatory commissions, or on appeal. Obviously, this first volume is designed to assist management people who have the responsibility of starting the rate case preparation (as distinguished from attorneys who must carry it through subsequent phases of formal procedure). But various readers will probably find that *Preparing for the Public Utility Rate Case* is equally valuable to utility lawyers and their rate case opponents as well as consultants, expert witnesses, regulatory commissioners, company executives, directors, junior officials, commission and company staffs — in fact any one may be involved in a public utility rate case.

The modern utility rate case, with its increasing delay, expense, and complications, has become a triple burden; to the rate-paying public, to investor-management, and to the regulatory commission organization held responsible for results. Obviously, therefore, any improvement in the technique of rate case preparation and trial is bound to facilitate and expedite fair and prompt disposition of rate cases — thereby benefiting all three groups. Good and sound practice thus comes to the aid of good and sound regulation. This is an important consideration in these days of overburdened rate case dockets and the serious economic damage which can follow unnecessary delay. Welch's book is clearly planned and well executed towards the accomplishment of these worthy objectives. It has a comprehensive index to subject matter, source references, and case citations.



Modern Cable Construction.....

By JOHN S. REED

In Section IV-A of his Article, Mr. Reed discusses — (1) the various kinds of telephone cable, (2) construction of lead-sheathed cable, and (3) uses of lead-covered cable.

Kinds of Cable Generally Available

TELEPHONE CABLE is made in different sizes and conductor gauges. Conductor sizes are generally 19, 22, 24 and 26 gauge. For ordinary exchange use, the conductors are twisted in pairs, with the twists in different pairs coming at different points to reduce cross talk to a very low limit.

If a number of phantom circuits are in cable such as rural or toll entrance cable, particularly where the cable is more than one-quarter mile in length, quadded cable is needed to prevent excessive crosstalk. Each quad is composed of two twisted pairs which are in turn twisted together to form the quad.

Composite cable has a combination of quads and pairs and is employed where a number of exchange circuits are to be carried in the same cable with toll circuits.

Telephone cable is obtainable with various kinds of sheath protection for different applications as follows:

(1) Paper insulated cable with lead sheath used primarily for exchange or toll lines in aerial or underground (conduit) installations.

(2) Textile insulated cable with lead sheath used at terminations in central offices and buildings where the conductors fan out on distributing frames or terminal strips (without sealed type chambers). Similar cable with an enamel coating on the conductors in addition to the textile insulation is also available for use where high humidity prevails.

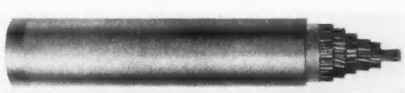


FIGURE 46 — In the concentric construction employed in the smaller cables, the pairs are stranded together in concentric layers. Photos — (Courtesy of General Cable Corp.)

(3) Paper insulated cable with a lead sheath protected from soil corrosion by a coating consisting of several wrappings of paper and jute impregnated with an asphaltic compound. This kind of cable is termed jute protected cable.

(4) Paper insulated cable with lead sheath protected by two layers of steel tape. Between the sheath and the tape are layers of impregnated paper and jute with intervening coverings of asphalt compound. Over the steel tapes are applied one or two lay-

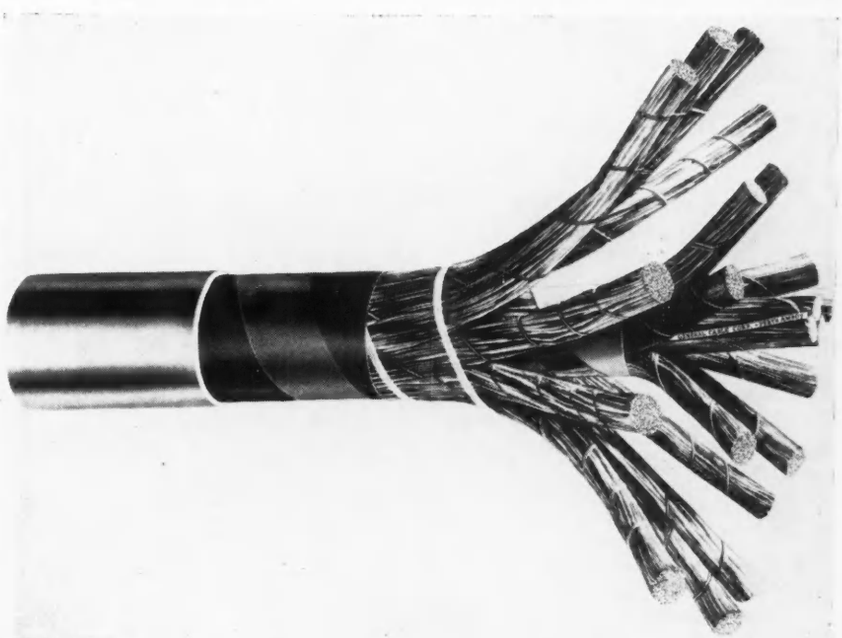


FIGURE 47 — The larger cables have a unit construction with the pairs stranded together in concentric layers to form units and the units cabled together in concentric layers. This arrangement facilitates locating the desired group of pairs for splicing to branches.

ers of impregnated jute and asphalt compound with a suitable finishing coat such as whiting or mica. For light mechanical protection as from gophers in buried cable installations, cable with a single layer of steel tape is employed.

(5) Paper insulated cable with a protective coating consisting of paper and jute in combination with a steel wire covering which in turn is protected against corrosion by an asphaltic flooded jute. This cable is available in two grades, one having a heavy armor wire (submarine cable) and one a light armor wire (gulley cable).

(6) Paper or polyethylene insulated cable with a jacket of polyvinylchloride or polyethylene used as a substitute for lead-covered cable. This cable has sheathing of aluminum or other metal between the core and the jacket.

Table II — 19 Gauge Paper Insulated Lead Sheathed Cable*

Conductors: Size 19 A.W.G. with single wrap dry paper insulation.
Color Coding: Standard color groups.
Mutual Capacitance (a-c testing): Average not exceeding .090 microfarads per mile of cable.
Insulation Resistance: Not less than 500 megohm miles.
Conductor Resistance: Not to exceed 46 ohms per mile of cable (68°F.).
Dielectric Strength: Insulation capable of withstanding a-c test potential for 2 seconds (maximum instantaneous) of 700 volts between conductors, and 1400 volts between conductors and sheath.
Attenuation: Approximately 1.30 decibels per loop mile (1000 cycles).

Number of Pairs in Cable	Number of Guaranteed Pairs	Stand. Reel Length Feet	Sheath Thickness Inches	Nominal outside Diameter Inches	Net Weight lbs. Per 1000 Ft.
6	5	3500	.063	.44	425
11	10	3500	.065	.54	580
16	15	3500	.067	.59	695
26	25	3000	.070	.72	940
51	50	2500	.075	.93	1450
76	75	1800	.080	1.11	1950
101	100	1600	.084	1.25	2415
152	151	1400	.090	1.51	3320
202	201	1200	.095	1.71	4160
303	302	900	.104	2.07	5845
404	402	700	.112	2.37	7500
455	452	650	.115	2.50	8285

*Data on 19SU-90 and 19S-90 Telephone Cable furnished through courtesy of General Cable Corporation.

Construction of Lead Sheathed Cable

THE SHEATH of lead covered cable consists of approximately 99% lead and 1% antimony. The antimony increases the hardness of the lead sheath and makes it less subject to crystallization as the result of mechanical vibration.

Lead covered cable is manufactured by insulating the individual conductors with a spiral wrapped paper ribbon or with paper pulp. The insulated conductors are twisted into pairs, the length of the twists being from 3 to 5 inches according to specifications. Paired conductors are then formed into cores of the necessary size of number of pairs. Extra pairs are included in a core to insure that, should a fault occur during manufacture, the purchaser will be sure of the full number of pairs specified.

The pairs are grouped in concentric layers in the smaller sizes of cable and in units in the larger sizes as shown in *Figures* 46 and 47. Each group is distinguished from the other group by a color code, as illustrated in *Figures* 48 *and* 49. This arrangement facilitates locating the different pairs and pair group assignments for splicing.

The cable core is heated to drive out all moisture and it is then run through a lead press which molds a lead sheath around the core. Coming out of the lead press the cable is placed directly on a wood or steel reel. While cable can be obtained in any desired length, the manufacturer usually specifies the maximum number of feet of cable to be placed on a standard reel.

Tables II to V list various sizes of lead covered cable that are available and gives their dimensions, lengths, and weights. Electrical characteristics of the different gauges of cable are also described in these tables.

One term used to describe a characteristic of telephone cable probably

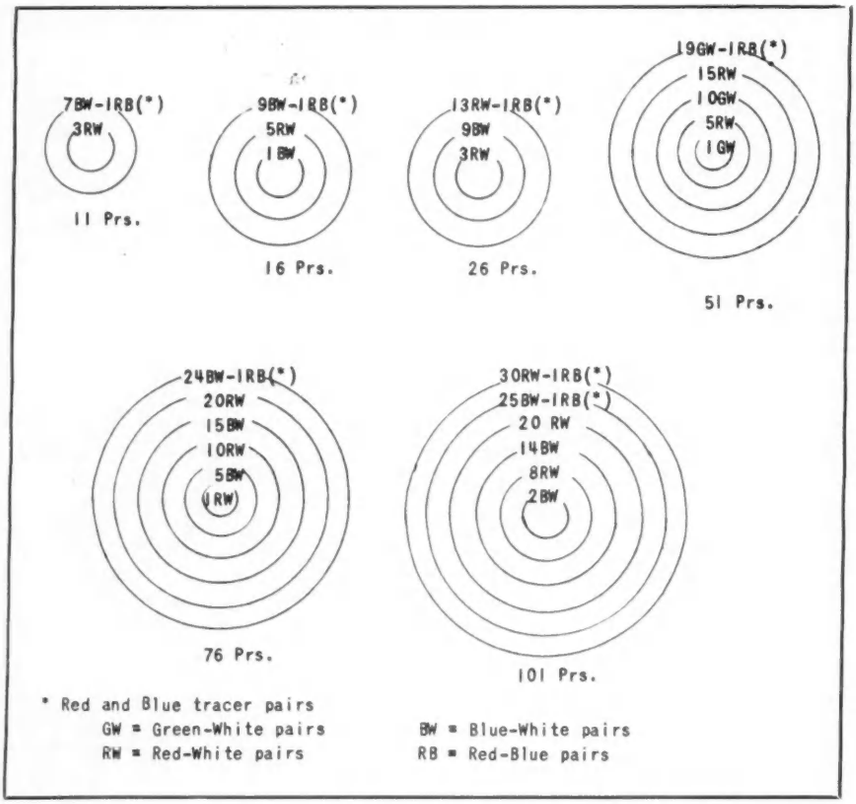


FIGURE 48 — For cables of concentric construction each concentric group has the insulation on the wires colored as shown.

requires explaining. This is mutual capacitance which refers to the capacitance between two wires of a cable pair when all other conductors are grounded to the sheath and the sheath in turn grounded. The capacitance of a circuit through cable affects the transmission of the circuit and limits the length of the cable as explained in a previous section.

Another characteristic is the grounded capacitance which is the capacitance of one wire measured against all other wires grounded to the sheath. The term, grounded capacitance, seldom is used in cable specifications as it applies only to single cable conductors employed in ground return lines. Ground return lines through cable are very sensitive to cross talk, hence cable is seldom used for this kind of service. Grounded capacitance is about 1.6 times the mutual capacitance.

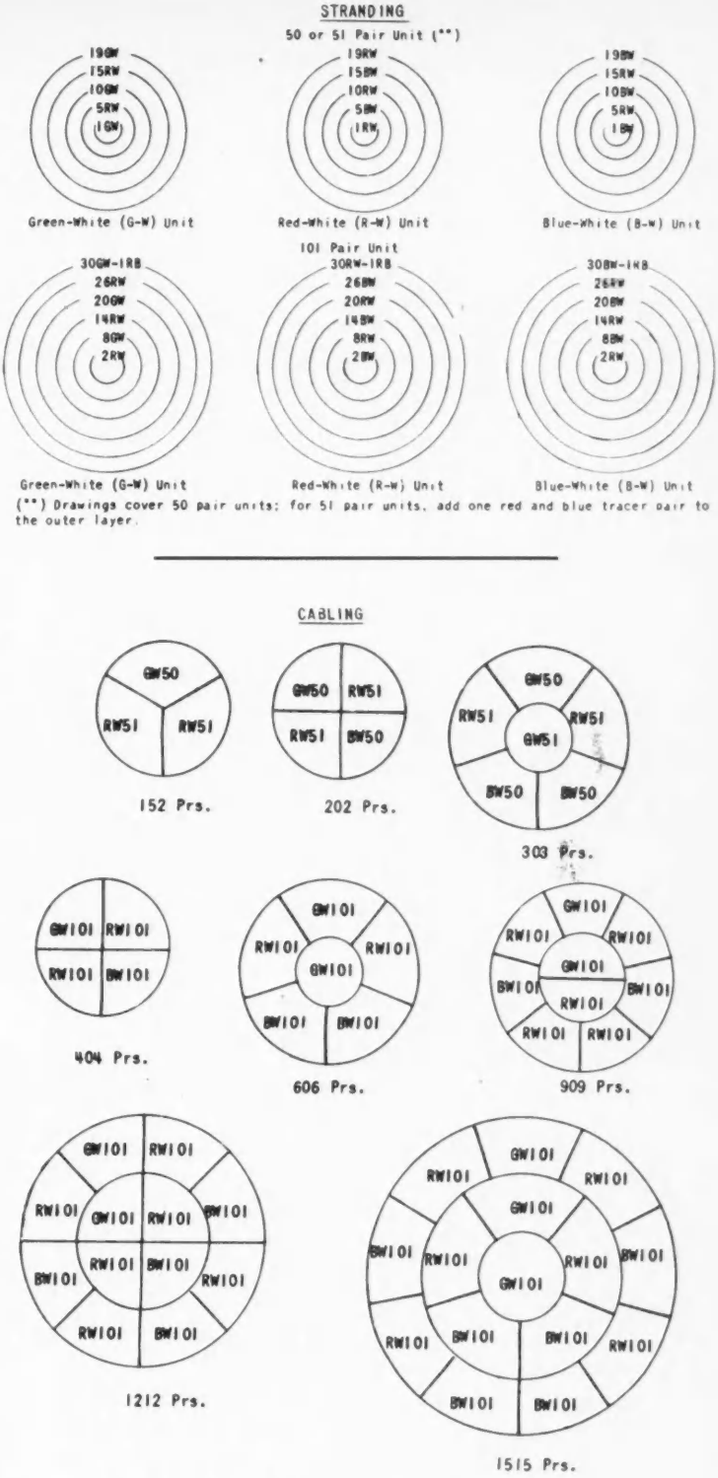
The mutual capacitance varies from .06 to .09 M.F. per mile and the capacitance of any cable depends on the nature of paper insulation used and whether or not it is a single or double wrapped insulation and the tightness with which the core is pressed. The tighter the core, other factors remaining equal, the higher the mutual capacitance. A single wrap insulated cable has a higher mutual capacitance than double wrapped because the two wires in the former are closer together.

Uses of Lead-Covered Cable

ORDINARY LEAD covered paper insulated cable is used for both aerial and underground construction. It is not suitable for placing directly in the soil due to danger of sheath corrosion as the result of chemical action of soil ingredients. In some soils the cable may last for years, while in others it will "pit through" in a relatively short time.

Lead covered paper insulated cable may be used as a distribution cable in buildings where there is a concentration of telephones requiring cable distribution. Textile insulated or tip cables are required for terminating in cross connecting and house terminals. The textile insulation is more rugged and will not absorb moisture as will paper.

EDITOR'S NOTE: — *Tables III, IV and V, referred to in this article will appear in the next installment of Mr. Reed's course on "Modern Cable Construction."*



The color refers to pairs in outer layer of unit.
A string binder shall be applied around each unit.

String Binder Colors

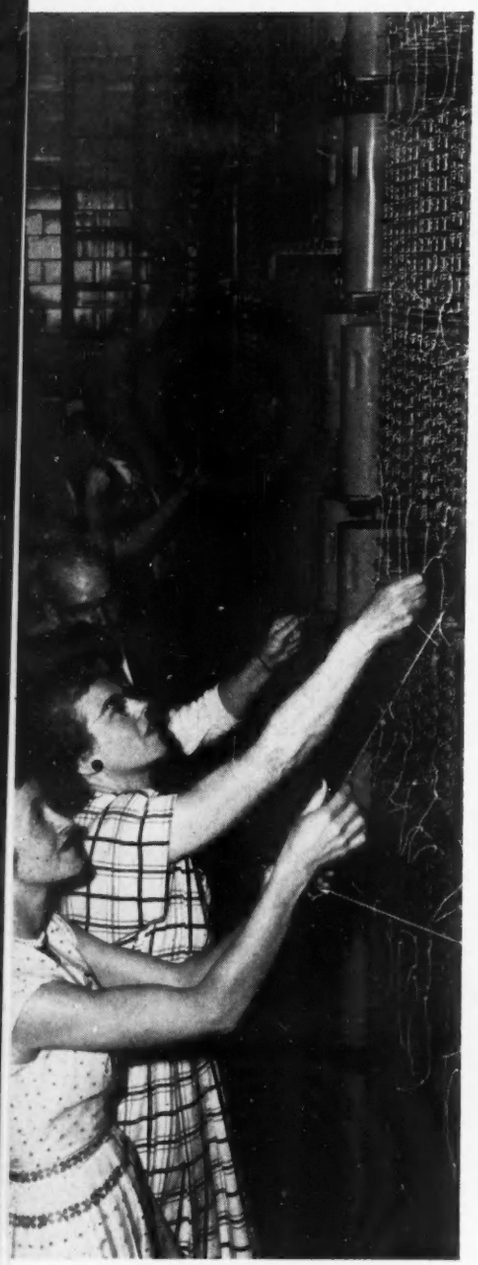
Cable Layer No. *	50 Pair Unit	51 Pair or 101 Pair Unit
1	Red	Red-Black
2	Red-Green	Red-Green-Black
3	Red	Red-Black

* The layers are numbered from the outside toward the center.

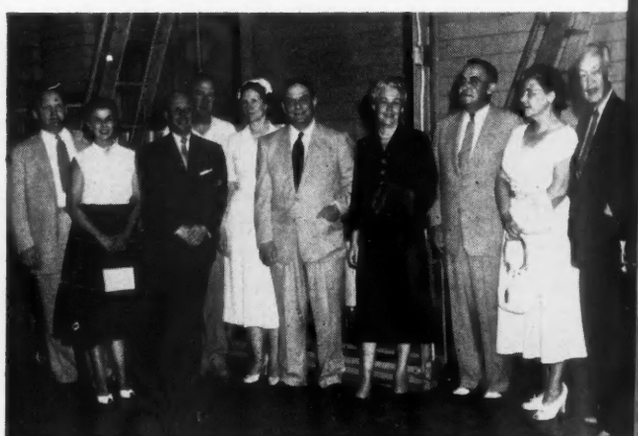
FIGURE 49 — In cables employing unit construction the color of insulation of the pairs in each group are as indicated under "stranding" above.

De Kalb, Ill. goes Strowger Automatic

"Pull the picks!" The switchroom hummed with excitement as 2600 lines of Strowger Automatic equipment with 5500 connector terminals were cut into service June 12th. De Kalb is the main toll center for the De Kalb-Ogle Telephone Company's 17 exchanges.



Replacement of old manual equipment with modern Strowger Automatic and installation of the latest type toll board give De Kalb, Illinois, the fastest, finest service possible. What's more, De Kalb is ready for nationwide toll dialing!



"De Kalb's worries are over," was the confident verdict as H. A. Joslyn, president of De Kalb-Ogle (6th from left), and C. S. Cadwell, president of Automatic Electric (3rd from left), noted the smooth operation of the new exchange.

month by month Strowger Automatic installations exceed all others

AUTOMATIC ELECTRIC

Originators and Developers of the Strowger Step-by-Step "Director" for Register-Sender Translator Operation . . . Machine Switching Automatic Dial Systems

Makers of Telephone, Signaling and Communication Apparatus • Electrical Engineers, Designers and Consultants

Distributors in U. S. and Possessions: AUTOMATIC ELECTRIC SALES CORPORATION
Export Distributors: International Automatic Electric Corporation
1033 West Van Buren Street, Chicago 7, U. S. A.

Star attraction at the De Kalb cutover was the new Type 31 Toll Board, which makes work fast and easy for these girls.

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nd C. S.
t), noted

Tied in with the nationwide operator toll dialing network is the new Type 31 Toll Board—all 16 positions of it! The board trunks to Chicago, Aurora, Elgin, Rockford, Belvidere, Geneva, and Sterling, and to all exchanges of the De Kalb-Ogle company.

Easy conversion to nationwide toll dialing is one of the big advantages of De Kalb's new Strowger Automatic equipment, due to its "2-5" first selectors. Note, too, the large vacant floor area—De Kalb is prepared for any foreseeable growth. Intertoll dialing is provided for a network of unattended exchanges linking nine surrounding towns.

Smart and attractive in appearance, the new exchange building is a fine example of the most modern telephone exchange architecture.

400 Attend 44th Wisconsin Convention

B. H. Piepmeier elected president of Wisconsin State Telephone Association.

WISCONSINITES traveled from all corners of the Badger State to set new attendance records and make the Wisconsin State Telephone Association's 44th Annual Meeting its biggest. The registration list indicated that more than 400 telephone people came to the Hotel Loraine in Madison for the day and a half session held May 5th and 6th.

The 1954 convention proved to be one of the busiest the Wisconsin organization has conducted. Time was equally assigned for work and entertainment. Events actually began Tuesday, May 4th, when parties were arranged for the men and women. It was the first time that anything special was staged for telephone women, and a dinner and card gathering, capably handled by Mrs. H. F. Jahnke of the McFarland Telephone Co., drew unanimous enthusiasm. As an added feature of the affair three electric clocks were awarded by the association as game prizes: one to Mrs. T. H. Sanderson, Portage, for bridge, another to Mrs. H. F. Jahnke, McFarland, for canasta and the third to Mrs. Helen Westermeier, Medford, for 500.

The Men's golf and dinner gathering, held this year at the Maple Bluff Country Club, under the Chairmanship of Ralph S. Odegard, president of the Menomonee Falls Telephone Co., drew 119, its largest attendance to date. There was a departure from previous custom in that a trophy went to the winner of the links tourney, H. F. Scott, midwestern manager of the L. M. Berry Directory Co.

Scott received his trophy from Warren Clay, USITA president, who was among the guests of the evening, which included Chairman James R. Durfee of the Wisconsin Public Ser-

vice Commission and Commissioner George Steinmetz.

Another innovation, in the way of sociability, was the hospitality hour put on by associate members of the Association immediately preceding the banquet. Bob Kurtz of Automatic Electric, Andy Sabo of Graybar and W. G. McDougall of Leich were the committee members who made the hospitality hour a success.

At the business session three new directors were named to the board, H. B. Flower, general manager of the Wood County Telephone Co., Wisconsin Rapids; R. H. Keating, president of the Amberg Telephone Co., Wausaukee, and H. P. Siebken, vice president of the General Telephone Co. of Wisconsin, Madison.

T. H. Sanderson, president for the 1953-1954 term, was re-elected to the board as was A. H. Bowden, president of the Almond Telephone Co., and J. F. Benjamin, president of the Cumberland Telephone Co.

New officers named by the board, at a meeting conducted the last day of the convention, included B. H. Piepmeier, president, who is also president of the Community Telephone Co., of Wisconsin, Black River Falls, and J. F. Benjamin, vice president. Officers named to succeed themselves were W. E. Lawton, president of the Viroqua Telephone Co., Viroqua, treasurer, and Ray J. Riordan, Madison, secretary.

Business sessions opened with a brief but cordial welcome to the city of Madison given by Mayor George Forster. This was followed by President Sanderson's address. In his report he referred to the growth of the association during the past two years, crediting to it the fact that the organization had embarked upon a full-time operation.

He cited the fact that membership increased by 57 per cent and that today the association has 212 dues paying members. He referred to the clinic program which had been undertaken and mentioned that the four meetings held thus far drew an average attendance of 71. He lent particular emphasis to the benefit that could be derived by small companies choosing to turn to the association for assistance and urged the members to avail themselves of the association's facilities. Legislation was touched upon briefly with Sanderson

WARREN B. CLAY, USITA president, left; MAYOR GEORGE FORSTER of Madison, who welcomed the guests, and T. H. SANDERSON, Wisconsin Association President, look over the convention program as activities begin.

B. H. PIEPMEIER, newly elected president of the Wisconsin State Telephone Association, and H. G. ALLEN, Wisconsin State Telephone Association, and USITA director, discuss events of the day at the annual Wisconsin convention.

HARRY E. BROOKS, president of the Central State Telephone Co., Junction City, and MRS. H. E. BROOKS, secretary-treasurer, greet MR. AND MRS. A. O. SANDERS of the Big Bend Telephone Co.

An exhibit of "Telephones for Every Purpose," provided through the courtesy of the Wisconsin Telephone Co., drew tremendous interest at the Wisconsin convention this year.

T. H. MORAN, president of General Telephone Co. of Wis., receives a plaque recognizing his contribution to the association as President during 1952-1953, from RAY J. RIORDAN, association secretary.

reporting that nothing detrimental had been encountered in his year at the helm.

In the course of his talk President Sanderson made special reference to the development of the telephone industry saying "the expansion of the telephone industry in this state has been outstanding. During the 10-year period from December 31, 1942, to December 31, 1952, the number of telephones in service in the state of Wisconsin has increased from 612,048 to 1,054,704, an increase of 72.3 per cent and our telephone plant investment has increased from 107,700,000 to 234,439,000, an increase of 117.7 per cent . . . . .

"Further, from 1939 — which we consider as a normal pre-war year— to December 31, 1953, telephone rates have increased only 65.6 per cent while the cost of living has gone up 92.8 per cent, the price of food, 138.9 per cent, the weekly wages in Wisconsin 179.10 per cent, and such weekly wages after deductions for taxes, 148.10 per cent."

He went on to say that the increase in cost of outside plant items since 1946 "range from 27 per cent to 198 per cent and the increase in the cost of equipment as shown since 1946 ranges from 27 to 107 per cent. The cost of labor—both traffic operators and plant craft employes—has about doubled since 1946 and telephone rates have increased less than 66 per cent since 1939. We are very proud of the record made by the telephone industry in keeping down rates. As shown by the figures presented the increase in rates since 1939 has been much less than the increase in the repairs and construction, and in the wages paid our employes, as well as the wages paid other workers, even after taxes."

MRS. H. F. JAHNKE, McFarland Telephone Co., relaxes after the ladies' dinner and card party. It was the first party of its kind conducted at a Wisconsin convention, and Mrs. Jahnke was in charge of the successful event.

President Sanderson impressed his audience with industry's responsibility to the public, citing the old quotation "he who will be greatest among you is he who serves best."

USITA president, Warren B. Clay, Hutchinson, Minnesota, succeeded Sanderson on the roster to bring greetings from Washington and a brief summary of legislative activity in the Nation's Capital. He also told his audience to concentrate on sale of service and public relations among the customers.

Panel Discussion

ONE OF THE program's most popular items was the panel discussion involving representatives of the telephone industry and the Public Service Commission. Moderating the discussion was the Honorable James R. Durfee, chairman of the Wisconsin Public Service Commission. H. J. O'Leary, chief of Rates & Research, and Ralph S. Butler, assistant chief, Finances & Auditing, spoke for the commission while B. H. Piepmeier, president of the Community Telephone Co., Black River Falls, L. H. Gilbertson, general manager of the Northwest Telephone Co., Tomah, and G. A. Rutenbeck, general commercial manager of the Wisconsin Telephone Co., spoke for the operating companies. A set of ten questions, submitted to the Association office by its membership throughout the year preceding the convention, served as discussion subjects for the hour long session. These are the questions:

(1) Will the members of the panel air their views regarding rural line extension construction charges? Some companies build one-third mile without requiring customer contributions and others up to one-half mile. Which is most fair to customer and company?

(2) Have there been any factors apparent during the past year that require the Commission to give consideration to increasing or decreasing the rate of return for telephone companies?

(3) We've all read or heard about the increase in unemployment since termination of the Korean War. What effect, if any, is this likely to have on the telephone industry in Wisconsin?

(4) There is certain disparity between some of the subscriber charges, such as service connection fees, off premise extension mileage rates, etc., made by the Wisconsin Telephone Co.

and those made by the Independents. Is there any reason why these should not be consistent, particularly if the exchanges involved serve about the same number of customers?

(5) Some of the agencies underwriting loans to telephone companies lend tremendous importance to the ability of the company's management. In the light of this should compensation for management be weighed on a per station cost or by comparison with compensation paid by companies of comparable size?

(6) Under what circumstances should a company—(a) Move its boundary line to permit a customer to receive service from another exchange other than the one that would normally serve him?; (b) Insist that customers take service on a foreign exchange basis?; (c) Provide extended area service?

(7) We are aware of the close scrutiny the Commission awards the ratio of debt to equity in the financing of telephone corporations as a means of protecting the stockholder. How, then, can it justify the granting of Construction Authority orders that will permit costs of five to seven hundred dollars per station on REA projects, costs that can only be reflected in exceptionally high subscriber rates?

(8) Should rates for rural service continue to be subsidized by those for other classes of service?

(9) Mr. O'Leary is chairman of the NARUC Toll Committee. We would like to have his comments as to whether or not we can expect that the disparity between inter and intrastate toll rates will decrease during the coming year. We would also like to receive comments from members of the industry as to subscribers reactions to the existing disparity.

(10) There has, over a long period of time, been comments about the need for help on the part of small telephone companies. Would each member of the panel give his view regarding the type of aid he believes might be rendered such companies by the Association?

Speaking on question number two dealing with rate of return, Commission Representative Butler said that no evidence had been presented in recent months to indicate telephone companies were entitled to or were in need of higher return on their investment.

Past presidents of the Wisconsin State Telephone Association were awarded plaques at the annual convention to recognize their contributions to the association. Four of the eight men honored are shown here. Seated left to right are: T. H. MORAN, who served the association from 1952-1953, and A. H. BOWDEN, 1948-1950. Standing at the left is L. M. LAMKINS, who was president from 1950-1952, and W. E. LAWTON, who headed the organization from 1940-1942. Mr. Lawton has the longest record of service to the Independent telephone industry of any individual in the state of Wisconsin, having served it faithfully for over 57 years. Past presidents honored but not shown in the picture included W. L. SMITH, Neillsville; WALTER DAKIN; Madison, E. B. SAMP, La Crosse; and E. M. BLAKESLEE, Santa Monica, Calif.

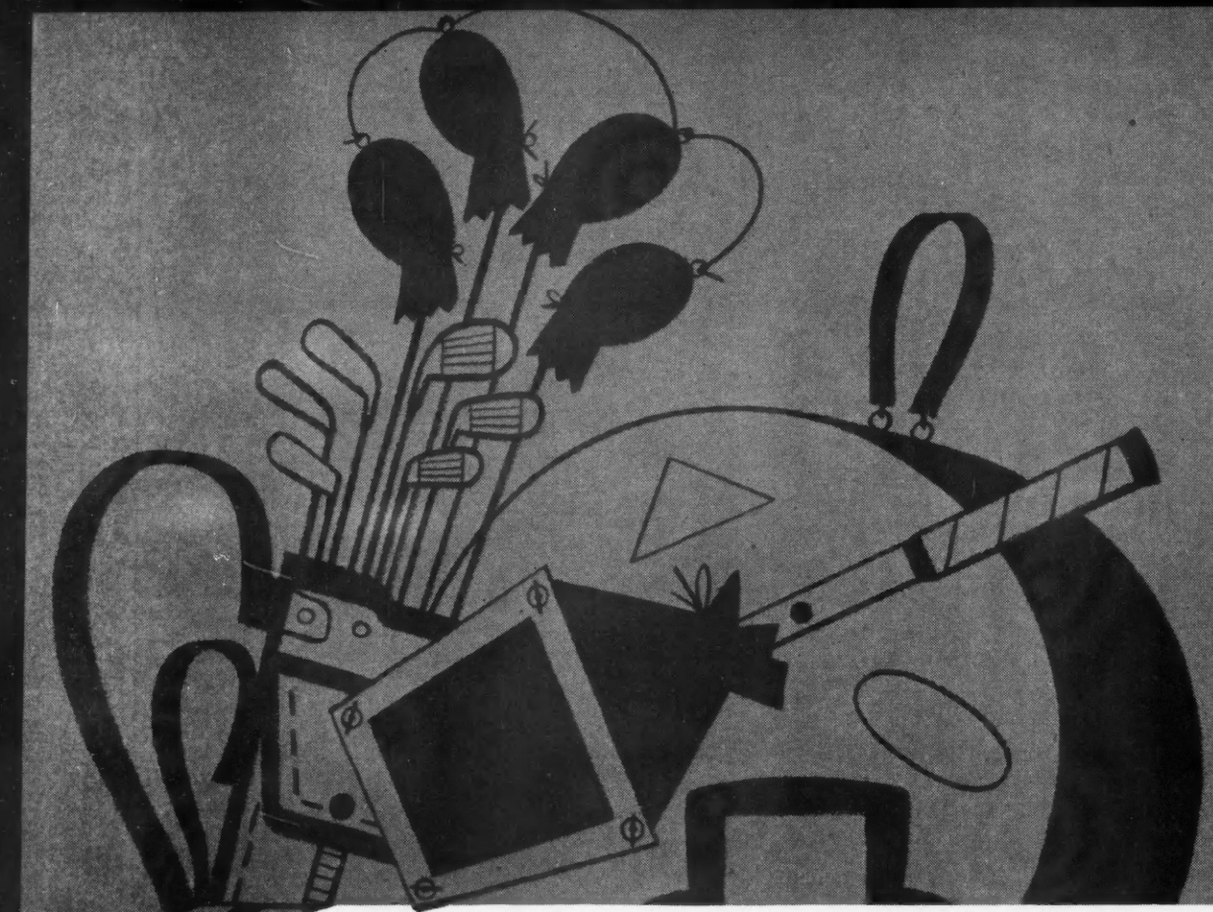
Replying to the seventh question, Commission representatives remarked that REA loans are specifically exempted from jurisdiction of the commission but that privately financed companies must adhere to the ratio of debt to equity outlined by the commission. Under a statute of 1911 the commission must fix this ratio after "giving consideration to many factors." Butler pointed out that the 50-50 ratio which is the general pattern in the state, though not arbitrarily, has worked out quite well. While it has acknowledged that many REA projects encounter high construction costs, commission representatives maintained that the cheaper financing cost tended somewhat to keep subscriber rates at an acceptable level.

In speaking on the question dealing with compensation to management, B. H. Piepmeier seemed to sum up the attitude of the industry side of the panel when he indicated small company management generally is not acceptably compensated. O'Leary, in turn, stated that the stockholders and directors of a company were in the best position to determine proper compensation for management and that the commission would not interfere unless it felt the salaries designated were completely out of line with those ordinarily in effect.

"Teaching Aids"

WEDNESDAY afternoon provided a particularly enlightening topic handled by H. S. Day, public relations supervisor of the Wisconsin Telephone Co., who spoke on his company's "Communication Teaching Aids Program." CTA, as it is referred to, is an arrangement whereby telephone company officials, working with educational authorities have been able to introduce communications as a part of the curriculum in many of the state's public and parochial schools.

Under the program, the telephone



Selling

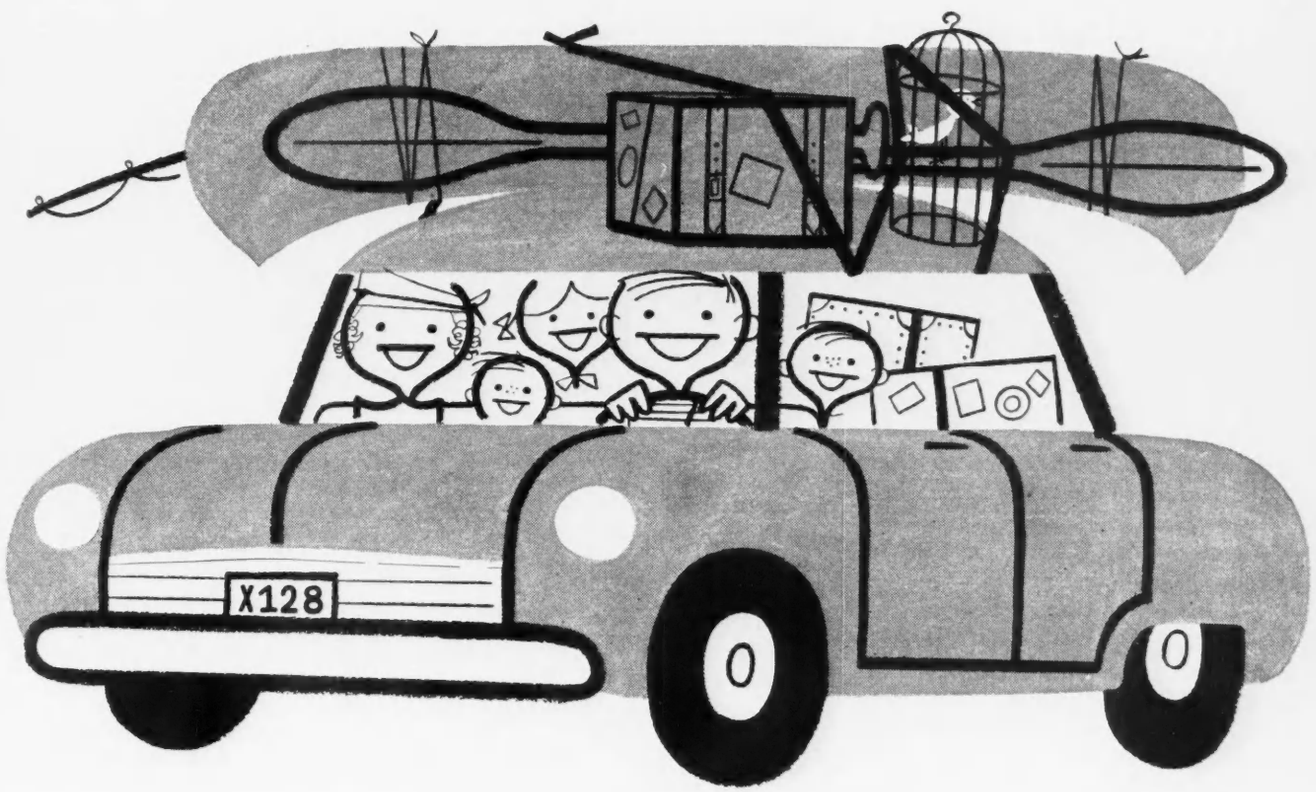
LONG DISTANCE

for all telephone companies

For the first time since World War II, America's telephone companies are in position to buckle down to the job of increasing the use of Long Distance. And a vacation month is an ideal time to remind travelers how Long Distance can contribute to their pleasure and peace of mind.

The advertisement across the way is designed to appeal to all telephone customers on holiday. It will be seen by more than 38 million readers of July magazines that reach customers of all the 5100 telephone companies in America.

Vacation Bound?



Telephone ahead *for a more pleasant trip*

Wherever you go this summer, let Long Distance add pleasure and peace of mind to your vacation.

Planning to travel? You'll want to telephone ahead for reservations. It's no fun hunting for rooms in a strange town when you're tired and hungry.

Making a side trip to visit friends? It's a good idea to telephone first and make sure they're home.

Expecting a business matter to come up while you're gone? A Long Distance call will keep you posted.

Some of the family staying home? You can keep in regular touch with them by telephone.

There are many ways Long Distance can add fun, subtract worry from your vacation. The service is fast, courteous, convenient. And the cost is low—much lower, we find, than most people think.

Save Time . . . Call by Number. It will speed your calls if you give the operator the number you want. For an attractive booklet for listing your numbers, ask the Bell Telephone office.

Long Distance Rates Are Low

Here are some examples:

New York to Atlantic City	**40¢**
Cleveland to Buffalo	**55¢**
New Orleans to Houston	**80¢**
St. Louis to Hot Springs, Ark.	**80¢**
Los Angeles to Boston	**$2.00**

These are Station-to-Station rates for the first 3 minutes, after 6 o'clock every night and all day Sunday. They do not include the federal excise tax.

BELL TELEPHONE SYSTEM

company has prepared tools that can be employed by the children, tools consisting of telephone and telegraph sets that may be assembled by the pupils. Three types of tool kits are available, one for the primary grades, in which the tools are assembled and ready for use, one slightly more complicated for the intermdiate or 4th through the 6th grades and one for the science or 7th and 8th grades. The latter includes additional paraphernalia, all of which must be assembled by the students before it can be placed in use. In fact, each unit is so developed that it taxes the youngsters' ability and imagination. Sets of illustrated instructions in language suited to the age group accompany each kit. The company also provides posters, booklets and film.

The posters, especially, have gained tremendous popularity. Teachers will display these and then direct the pupils to employ their imagination in drawing sketches to depict the ideas promoted by the posters, such as party line courtesy, etc. Speaker Day exhibited the efforts that had been produced in several of the schools and it left no doubt with the audience that the youngsters of today are not lacking ingenuity.

School authorities have accepted CTA wholeheartedly and the effort has resulted in a better understanding of communications as well as more considerate use of the telephone by the younger set. And, most important of all, according to Day, is the fact that the grade pupils, in the cities in which Teaching Aids has been introduced, have actually become good will ambassadors for the telephone company. The Wisconsin association has worked with the Wisconsin Telephone Company to introduce the program to the state.

P. M. Ferguson, Jr., Mankato, Minn., a member of the USITA Advertising Committee, and Ray J. Hanauer, supervisor of Toll Promotion, Wisconsin Telephone Co., followed the theme, "Let's Promote Business," in their session.

Ferguson impressed the point that customers are more particular today, that they have come to expect good service at all times and that the company has an obligation to provide it. He described Open House programs as a means of becoming better acquainted with the customer and reccomplicated for the intermediate or ing ideas that have been devised by the USITA committee as a medium of bringing the telephone story to the public. Hanauer concentrated on means of promoting more toll business and stressed the success his company had realized with the outdoor pay station.

Foreign Exchange and Extended Area Service

FOREIGN EXCHANGE and Extended Area Service (EAS), two problems of growing complexity in Wisconsin, were treated in excellent fashion by Ralph S. Odegard, president of the Menominee Falls Telephone Co. and chairman of the Association's Foreign Exchange & EAS Committee.

Speaking on Foreign Exchange, Odegard referred to the plan his committee has studied for two years. It is designed to meet demands in fringe or boundary areas where the customer frequently desires service from an exchange other than the one which would normally serve his premises. Wisconsin has developed a plan whereby the customer's demand may be satisfied and the company serving the territory in which he resides will receive compensation for facilities within its boundaries despite the fact service is rendered by a foreign exchange. Odegard emphasized too, the essential need for filing boundaries with the Commission as the first step in any effort to maintain territorial claims. Wisconsin companies operate under a law whereby rural line extensions should only be made if all companies operating within the township in which the extension is to be made are agreeable. Filing of boundary maps, Odegard pointed out, saves the paper work and time required for filing waivers and notices to serve each time a rural line extension is made.

In his report on Extended Area Service, Odegard went on to say, "The foreign exchange plan . . . was never intended to be applied in the more serious cases involving demands from suburban area customers for service from metropilitan centers. The answer to service requirements of this type is a plan known as Extended Area Service which . . . is designed to protect the territorial integrity and thus also the economic welfare of the smaller company."

He thoroughly covered these five points: (1) What extended area service is; (2) what prompts its introduction; (3) what its value is to the telephone company; (4) who pays the "freight" for EAS; and (5) what is the Public Service Commission's view with respect to the rates that apply to it.

In summary, he pointed to the fact that the EAS plan developed in Wisconsin might well be the forerunner of EAS plans in the country inasmuch as it called for:

(a) Equal distribution of costs between participating companies for distances up to 10 miles.

(b) Subscriber rates based on the costs incurred by participating companies.

(c) Each company involved recouping toll losses encountered from subscriber revenue increases rather than via the value of service theory whereby the smaller exchange makes payment to the larger.

During the last morning's sessions there were reports from the resolution committee, headed by Gilbert Karcher of the Burlington, Brighton & Wheatland Telephone Co. and the Nominating Committee headed by Paul J. Weirich, president of the United Telephone Co., Monroe.

Following the reports, two men, H. B. Flower, general manager of the Wood County Telephone Co., Wisconson Rapids, and H. F. Jahnke, vice president of the McFarland Telephone Co., spoke on the "Microfilming of Toll Tickets," a process rapidly gaining increased popularity in the state.

Each treated different aspects of the topic. Flower, whose company is one of the larger Independents in the state, serving over 8000 stations, toll about the investment for equipment and the resultant savings in billing time and storage space.

Jahnke, whose company serves about 500 customers, has his toll tickets microfilmed by a commercial firm in a nearby city and has no investment in equipment but merely pays a set fee of $4.00 per thousand tickets filmed. The speakers left no doubt with the assembly that both they and their customers were pleased with the operation.

Summing up advantages of the process Mr. Flower said: "It is not difficult to prove that microfilming of tickets saves us the wages of one girl. That does not mean that we have eliminated an employe, but

rather that we have done away with costly over-time during the billing period. Further, it has speeded up our billing to such an extent that we now have employe time to devote to other necessary clerical duties without hiring additional help. "It has provided the finest means of top level promotion for better public relations."

He indicated that his company used to spend the better part of 12 days looking up tickets in order to explain toll charges to customers — toll charges on calls that had been placed which the customer forgot about. This task is no longer faced by the girls in the business office.

He went on to say, "We have a large number of heavy toll users . . . two paper mills, a number of manufacturing concerns, the State Highway department, five railroads, our County and City offices, and many salesmen, livestock dealers, and others. Previous to Operation Microfilm, we were called upon regularly to supply some of these users with a complete break-down of the toll statement rendered to them for a certain month. It seems that their accounting departments wanted the information for study purposes. Possibly, we could have refused to make these break-downs, but, there again, custom prevailed, and we supplied their requests for information. Now, we provide original records, showing place, person called, date, calling party, and the time of the call, all in the handwriting of the toll operator who handled the transaction; and our toll users have no need to make costly requests for information from our company.

"Salesmen send the tickets to their companies to support their expense accounts. I must add . . . this is not always popular with some salesmen . . . but is welcomed by his employer. The railroads and State Highway departments have a system whereby they have always broken down and analyzed each long-distance call. They really appreciate having the original tickets. The public, in general, took to the idea immediately, and we have never introduced an operating practice that has met with such universal approval, as well as providing a much needed service to our communities."

It was De Loss Walker, nationally recognized as a lecturer, writer, and editor, who electrified his listeners in the convention's final hour. Walker, a Chicagoan, who once filled an appointment for the Chinese government, has been instrumental in settling labor disputes in many parts of the country and has spoken before legislative groups called together in special session for his appearance. Vigorous and dynamic in his delivery, Walker admonished his listeners that good service is a responsibility of telephone management and unless it is given the public, who in his opinion is the true "boss," stormy days lie ahead. Treating the topic, "Is it Recession or Reality" he termed the period we are now encountering one of adjustment in which the "men will be separated from the boys and the boys, if they live, will work for the men." At the conclusion of his remarks he was awarded a standing ovation.

"I barked into it twice and a man said 'Yes, Dear!' "

The annual banquet had the usual entertainment feature of convention banquets but there was time set aside for serious activity. Eight men who had served the Association as presidents during preceding years were cited for their contributions to the Association and Industry with the award of attractive oak plaques with inscribed bronze facing. Past presidents in attendance to receive plaques included — L. M. Lamkins, president of the Manawa Telephone Co., who headed the association from 1950-1952; A. H. Bowden, president, Almond Telephone Co., 1948-1950; W. L. Smith, president of the Badger State Tel. & Tel. Co., 1915 1924, 1925; Walter Dakin, chairman of the board, General Telephone Co. of Wisconsin, 1946-1948; W. E. Lawton, president of Viroqua Telephone Co., 1940-1942, and T. H. Moran, president of the General Telephone Co. of Wisconsin, 1952-1953. Two men who were absent but who were awarded recognition included E. B. Samp, vice president of the La Crosse Telephone Corp., who served the association from 1944-1946 and E. M. Blakeslee, president of the General Telephone Co. of California, who headed it from 1942-1944.

Lawton, incidentally, has the longest record of service to the Independent industry of any individual in Wisconsin. His service tenure was initiated in 1897 and he has served the association as a director since 1919 and has been treasurer of the organization since 1943.

THE END.

500 Attend 49th ILLINOIS CONVENTION

Ray Alter reelected president of Illinois Telephone Association during organization's 49th annual convention.

APPROXIMATELY 500 members of the Independent telephone industry attended the 49th annual convention of the Illinois Telephone Association. During the two-day session at the Hotel Pere Marquette, Peoria, the Illinois Independents reelected Ray J. Alter, Galesburg, president. Other officers re-elected were: Gordon Aller, Chicago, vice president; J. G. Hardy, Springfield, secretary; R. B. Still, Bloomington, treasurer; and Ben B. Boynton, Springfield, general counsel.

Directors reelected for three-year terms are: Mr. Alter; Walter Dakin, Madison, Wis.; C. E. Frey, Troy; Russell Logue, Casey; and C. F. Melick, Eureka.

Directors elected for one-year terms are: W. R. McGrew, Park Ridge; and R. C. Ross, Clinton. Daniel Schaefer was elected a director to succeed H. A. Joslyn, Sycamore.

"One Step Forward"

ILLINOIS Association President, Alter, speaking at the opening session, told the convention that one of the outstanding efforts of the Illinois Association during 1953 was to try to reach out into what "you might call the grass roots."

"Our efforts," he said, "were to contact everyone, large and small. This was done through the medium of district meetings. There were five during the fall season."

Explaining the success of the district meeting plan, Mr. Alter said 95 companies were represented at the various meetings and the attendance was over 600.

"In other words," he said, "there was an average of about 120 at each meeting. As I attended all of them personally, I can assure you, and those of you who were at the meetings know, that it was a good activity and I believe it was appreciated."

Discussing the future, Mr. Alter stated, "we have a whole host of responsibilities."

"I think our primary consideration and our basic responsibility," he said, "is consideration and fair treatment of our customers, and that implies good service and all the things that go with it. I wonder, maybe, if we look around our organization, if perhaps we examine our own attitude, our own behavior, maybe we

Above groups were photographed during recent convention of Illinois Telephone Association by FRED ADDIS of the General Telephone Co.

have found that we are a little bit like that clerk in a department store that throws it out on the counter with that *take it or leave it* basis that we all went through for so many years. Maybe we aren't that bad, but it might just be that we are a little ragged at the edges, so it would help to do a little soul searching and begin to remember that the customer is quite a fellow and let's treat him with the consideration and the respect that he deserves and that he pays for."

Emphasizing the importance of activities of the small company committees, Mr. Alter urged industry members to realize that — "Your next door neighbor may need a little advice."

"He may need a little counseling," he said. "He might just want to sit down and talk his problem over with you. Wherever you can, try to enrich your personality by going out and helping the other fellow just a little bit. It will not only help you, but it will help the whole industry."

Stressing the importance of service improvements, Mr. Alter said — "No matter how large or how small you are or how good you might think you are, there is always something that each of us can do. The fact that you may be pinched a little bit or that you may be small is no excuse either. There is a common old saying, *no matter how poor you are, you can at least be clean!* Soap and water do not cost much. Similarly good housekeeping habits do not have a very high dollar tag on them. It is just a way of life, a way of thinking and it is a program carried into action. Clean up your exchange quarters if you are small or large. Invest a few dollars in a little bit of paint, wash the windows, be a good housekeeper. You'll be surprised what a reaction it has on your customers. It can't help but be favorable."

In his closing remarks, Mr. Alter urged industry members, "to look realistically at your money means."

"I'm not talking about that payroll that you've got to meet next week," he said, "or the bill of material that is lying on your desk that you have to pay by the 10th of next month— I'm suggesting that you project your thinking maybe through next year and try to see what position you'll be in and what you need.

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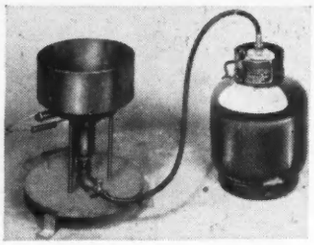

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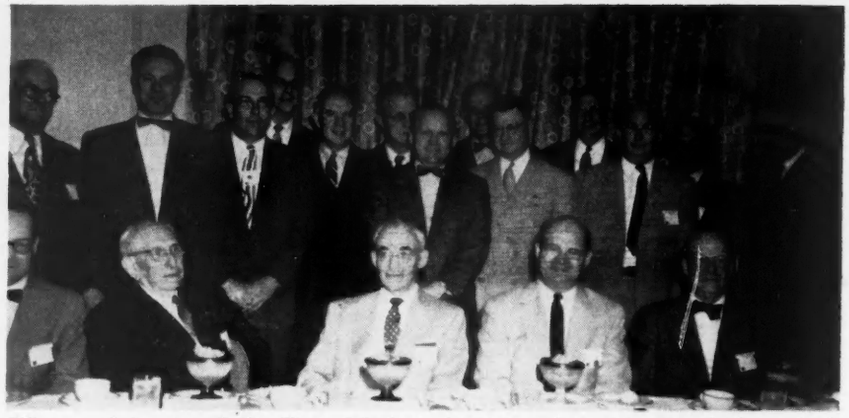

Officers and directors of The Illinois Telephone Association. Front row, seated, (l. to r.): C. W. EBERSOLD, Chicago (guest); R. B. STILL, Bloomington, treasurer; C. F. MELICK, Eureka; RAY J. ALTER, Galesburg, president; HARRY H. BATES, Dixon. Back row (l. to r.): J. I. KENNEDY, Freeport; A. T. RENN, Chicago; C. E. FREY, Troy; R. C. CROSS, Clinton. R. A. LUMPKIN, Mattoon; BEN B. BOYNTON, Springfield, general counsel; DAN SCHAEFER, Sycamore; M. A. KUGLER, Okawville; WALTER DAKIN, Madison, Wis.; DONALDSON COOMBES, St. Louis, Mo.; J. G. HARDY, Springfield; BURTON W. SAUNDERS, Springfield; and W. R. MCGREW, Park Ridge.

in the establishment of the fair value rule in the State of Illinois, we are especially fortunate in being able to work out our rate problems in a good atmosphere. Don't hesitate to examine your situation and if you need money, just be sure you need it, build a good case and go in and get it. You'll receive courteous, understanding treatment at the commission, large or small, and it is necessary to you to have the money to run your business; so do it.

"I only want to chuck in one word of caution. There is a certain amount of morality in everything and bear this in mind: You have an operation that is going along good and merely because of the fact that you can see other fellows running along down to Springfield and getting a rate increase it occurs to you that it would be a good idea. Don't do it on that basis, because if you do, you are apt to come home with a bad story. I said we had an understanding commission, but they are not foolish, they are not going to give or condone any rate case increases that are not required."

General Counsel's Report

BEN B. BOYNTON, the association's general counsel, brought the convention an interesting review of the industry's major problems.

Pointing out that in 1914 there were almost 1000 telephone companies in the State of Illinois, Mr. Boynton stated that now there are less than 400.

"Most of the companies that dis-

Members of this Illinois Convention group are (l. to r.): LEON F. ROBERTS, Bloomington; ART KIESLING, Madison, Wis.; E. H. FRENCH, Chicago; DOUG SMITH, Chicago; and WALTER DAKIN, Madison, Wis.

RAY W. SMITH of Telephone Engineer Publishing Corp., Chicago, and Illinois Convention Photographer FRED ADDIS, Springfield.

appeared sold to or merged with other companies," he said. "Others just folded up and quit. Part of this vacated territory still lacks telephone service. This is one of the many problems facing the telephone industry."

Emphasizing that every person desirous of telephone service and willing to pay standard rates should therefore get it, Mr. Boynton stated many puzzling questions arise in trying to reach that goal.

"The unthinking," he said, "may say it is simple. Simply have a large telephone company that is near that territory take it over. There are two main obstacles in the way of this course. First, if such company were to take over this additional territory it probably would have to curtail its program of construction and improvements in its own territory that needs the construction and improvements to adequately serve its own people. Service to present subscribers should not be impaired or its betterment curtailed in order to take over additional territory. Second, a telephone company cannot be compelled to serve a territory which it does not hold itself out to serve. Since it can be compelled to render adequate service in its own territory it should not take an additional area unless it is able to give adequate service, not only in its own territory, but also in the additional territory it takes over."

Warning that a solution must be found, Mr. Boynton commented that, "it is unthinkable that conditions may be allowed to exist year after year where there is either no telephone service of any kind or only

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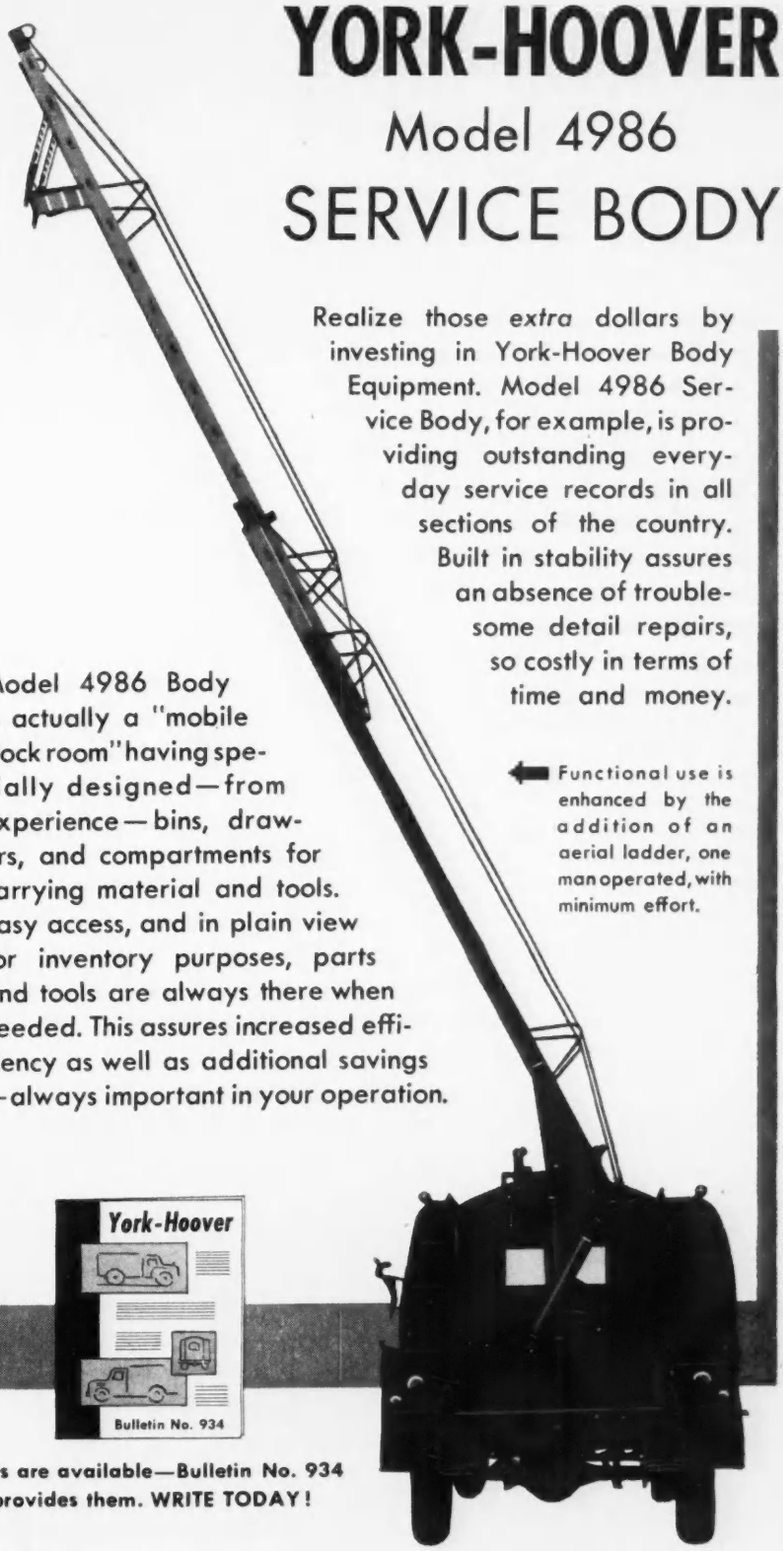

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the poorest kind of service available. Looking back over the past 40 years, I do not see any one formula for solving the problem. I believe each situation must be studied, both by itself and in connection with adjoining companies and communities."

Mr. Boynton stated that in some instances mergers of several small companies may increase the size to the point where the merged company can obtain the necessary institutional financing to make such construction and improvements as are necessary to give adequate telephone service.

Mr. Boynton said, "In other cases, by a sampaign of enlightenment, show what is required to obtain the necessary desired telephone service, the financing and work and improvements as are necessary can be done on a community basis."

"In all cases," he said, "the first step is to determine what should be done in order to furnish adequate telephone service in the community or communities in question and the next step is to determine the most practicable way of accomplishing that result."

Stating that it may seem impossible to handle some cases because they seem so hopeless, Mr. Boynton stated, "we still have some small telephone companies that *just growed like Topsy*."

"They grew without direction, plan or management," he said. "If they are to fulfill their functions, these companies must be converted to useful enterprises. This conversion will require not only good management and work, but also financial ability to make the necessary plant expenditures required to give a complete and adequate service. The company cannot have the financial ability unless it has adequate earnings. It is not only in that company's interest but also in the community's interest that the company has adequate earnings."

Secretary's Report

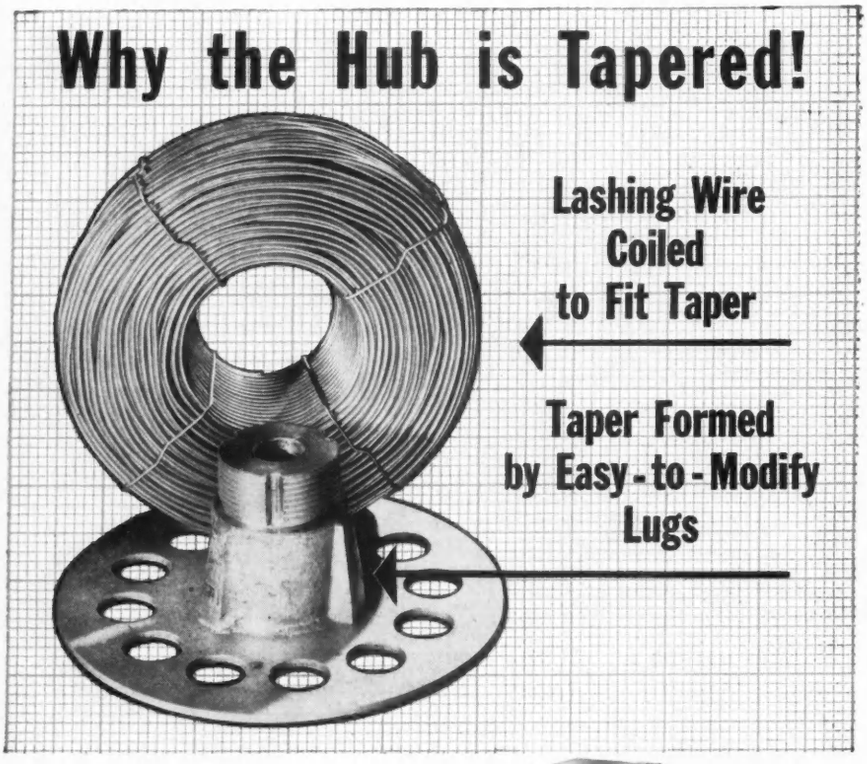
ILLINOIS Secretary Hardy told the convention that securing capital is one of the many problems of our small companies.

"Another important part," he said, "is securing sufficient revenue to maintain the company in a healthy condition. As in previous years, we have assisted and advised many companies in applications for rate increases and have devoted a major portion of our time and energy in preparing rate applications and tariffs. In the past three months the need for small company increase in rates seems to be growing greater. There are still many companies that have not raised their rates and the subscribers are still paying the prewar prices. Many of our small companies need increased rates but have failed to put their house in order and lack the initiative to secure increased rates."

Emphasizing that one of the most important steps necessary in rate applications is proper accounting, Mr. Hardy reported that there has been much improvement in the past several years in the accounting practices of many small companies.

"This improvement," he said, "has made the rate increase applications much easier to handle."

Pointing out that as a result of rate applications, there has been need of modernization of tariffs, Mr. Hardy explained that several years ago the Illinois association designed



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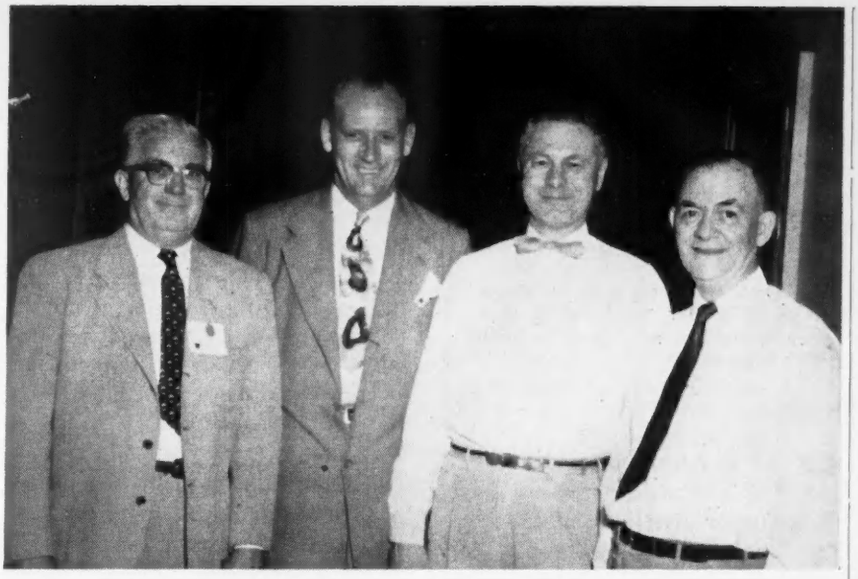

Members of this Illinois Convention group are (l. to r.): J. G. HARDY, Springfield; DON ANDERSON, Geneseo; A. T. RENN, Chicago; and R. B. THOMAS, Springfield.

a simple general exchange tariff which was adequate and complete.

"The majority of telephone companies within the state," he said, "have filed such rules and regulations and conditions of service, and those public utilities that have not filed them should do so at their earliest convenience."

The Washington Outlook for Public Utilities

DISCUSSING better organization of relations with government, Francis X. Welch, managing editor of *Public Utilities Fortnightly*, Washington, D. C., emphasized that, "management people must turn themselves inside out trying to search and explore in every problem that we have a contact with the government the way of stressing the positive value."

"Remember that old song during the depression about eliminating the negative and emphasizing the positive," he said. "It is good advice. We have to bring to the public the impression that these public utilities are primarily interested in bringing service in more and better quantities and quality to more and more people. It can be done. Of course, it can be done. Because, it is a true story. There never was a truer story. Consider the public utility gamut. Here in the telephone business are two-thirds of all the telephones in the world while we only have 7% of the population of the world, over half of all the electric generating capacity in the world, more thousands of gas pipe lines than all the rest of the world put together, miles of railroads. Anyway you want to look at it those human values can be stressed and they must be stressed."

Commenting that there is no such thing as a Democratic public utility or a Republican public utility, Mr. Welch said, "public service knows no politics and that is why we have to emphasize the cause of good public utilities to the responsible elements of both of our great political parties."

"Now that can be done too," he said. "It can be done because, fortunately, we have in this country a responsible two-party system. Sometimes we hear very zealous and intelligent people wonder amongst themselves why it wouldn't be possible to realign our political parties so that all the leftists could get into one group and all the right wingers could get into another.

"Ostensibly, on the surface, it sounds like a good idea — more honest at least. Well, I only hope it never happens here because if it ever did, it would be the end of responsible democracy as we know it. Now the trouble with the idea of separating all the lefts and the rights, the sheep from the goats, is just this — that there are more than two sides to most really tough questions and to carry that idea to its logical conclusion you would end up not with two parties, but with half a dozen or more, each consecrated to a given economic objective. Now we have only to look at the weak and bungling compromise and block government of so-called

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Parliments of democratic countries in Europe to realize that that stuff is not for us."

In conclusion, Mr. Welch urged industry members to stress the positive values of the telephone business.

"You cannot afford to be timid or ashamed about it," he said. "I'd like to suggest just one acid test of any major policy decision that the industry might make, and I'm speaking now of all utilities industries. The test question is very simple. Is this decision, whatever it might be, consistent with the industry's overall ability to bring more and better service to the public? If it is we don't have to be ashamed, we don't have to be afraid, we can be sure of the consequences, it will be good."

Traffic Conference

GEORGE WOPAT, Normal, Ill., presided at the Traffic Conference and presented: James F. Van De Vusse, president of the Illinois Telephone Co., Bloomington; Miss Lydia Mielke, traffic supervisor, Union Telephone Co., Owosso, Mich.; R. B. Thomas, chief engineer, Illinois Commerce Commission, Springfield; and F. E. French, personnel supervisor, Illinois Bell Telephone Co., Chicago.

Discussing the chief operator's job, Miss Mielke, stated, "The primary function of a Chief Operator is to see that the people under her supervision can do complete calls," and elaborated to stress that the achievement of desired results was accomplished through the medium of democratic leadership; and attitude of "we the people."

In setting forth eight items covering parts of a chief operator's job, Miss Mielke outlined not only the practical technical knowledge phase of the work, but the human relations side. She emphasized that to have good human relations means, "one must love and study people, for people are the job and human relations must be lived every day."

"Another trouble with Socialism is that it soon runs out of rich people and has to fall back on folks like you and me."

To further illustrate the qualities required of a chief operator, Miss Mielke chose four ideals as a guide; character, leadership, service and scholarship, and defined scholarship as the "outward sign of your capacity to learn, to grasp, to seek, to find and to do."

In "Telephone Service As Seen Through the Eyes of the Commerce Commission," presented by Mr. Thomas, the requirements for good and acceptable service were graphically outlined.

"Service is all of the things that a subscriber of a telephone company expects, and has a right to expect," he said, "and includes clear and uninterrupted conversations."

"Responsibility for service cannot be limited to one department of a telephone company," said Mr. Thomas. "The telephone is no longer a luxury, but must be considered a necessity."

He drew a comparison between other utility services such as water, gas, and electricity and telephone service and cited the differences in customer attitudes toward these services. Since completely satisfactory service is never brought to the attention of the Commission, Mr. Thomas classified the complaints which are received as those which are reasonable and which can be adjusted, those from "cranks" who obviously have no knowledge of telephone company operations, or of Commission functions, and those from subscribers who deal in generalities.

In pointing out the various responsibilities of telephone companies to their subscribers, he also mentioned the obligation to provide service to new customers. In conclusion, Mr. Thomas urged small company management people to avail themselves of the service provided by the experts in the Small Companies' Committee from larger companies.

Mr. French discussed the relations between humans in general and telephone operating people in particular. In cleverly done comparisons, Mr. French pointed out that "most of us have our biases and prejudices, our likes and dislikes, but we cannot afford to dislike."

"Leadership is a human art," he said. "You must begin with self examination — must be an example in order to motivate others. You have to want to be the best kind of tributary or toll center. You must want to help."

In developing the theme of good human relations, Mr. French used a phrase which will linger in the minds of his hearers when he said that good human relations is what "puts the hum in humanity."—THE END.

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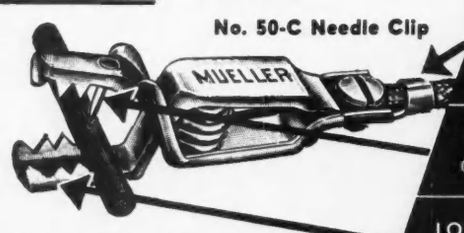
#60S Telephone Test Clip #62 Ins.
#27 Universal Test Clip



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LONG SLIM ALLIGATOR NOSE. Allows full test clip use—on panel board studs—in ALL tight spots!

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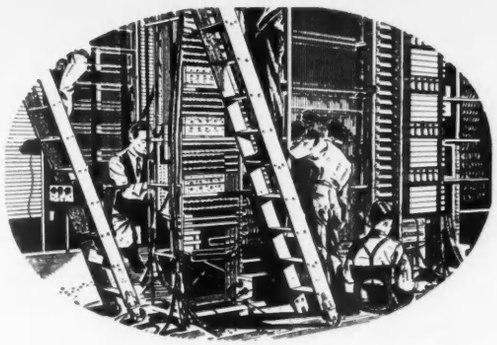

Questions and ANSWERS

Conducted by JAY G. MITCHELL

In this installment of his popular department Mr. Mitchell discusses: (A) Proposed Pocket Multitester; (B) Preliminary Plant Layout; (C) Possible Carrier Installation; and (D) Request for Repeater Theory.

Pocket Multitester

QUESTION:—*We have been considering the manufacture and offer to the industry of a small pocket unit tester with multiple dbm. calibration. The lower dbm. range would be with the 0 dbm. at about 60% of full scale deflection, readable down to minus 16 and up to plus 10. The total scale span would be 30 but the really useful portion of the scale would have a range of about 35 dbm. The multiple scale calibration would provide a range also up to about 40 dbm. The unit would have a constant impedance at all of the dbm. ranges looking into it from the line. It would also be calibrated for a Zero Reference Level of 0.001 watts in a 600 ohm loop. Do you think it would make the instrument more useful if a self contained battery and calibration for an ohmmeter scale were also included?*

Would it make the proposed instrument more atractive for ordinary routine telephone testing if a rectifier type of A.C. voltmeter of high impedance, 5,000 to 7,000 ohms, with its associated scale calibration were included?

ANSWER:—This inquiry is published to open up a possible channel for the determination of the type of tester that the industry desires. When these requirements are known the manufacturer can make an intelligent study of the possibilities. Comments are specifically solicited for the use of QUESTIONS AND ANSWERS.

Preliminary Plant Layout

QUESTION:—*We are a small telephone company operating three separate exchanges and, in order to retain the good will of our patrons, we are planning on a large, for us, rebuilding program. While our plant is now all magneto we expect to install a different type of equipment in the not too distant future. In fact the plan is to rebuild the plant that is too old and in too poor condition in such a way as to make possible the conversion later to improved service.*

With the completion of the rebuilding we shall file an application for increased rates but that is not the immediate object, at least not at this time. Can you outline in general terms some of the foundation considerations that we can study out in preparation for later surveys by outside experts? Any outline that we may use in this way will be very helpful and very much appreciated and will give us a starting point from which to make up our plans as recommended by the experts that we plan to employ.

ANSWER:—This is, of course, an inquiry that cannot be answered except in a very general way. The first thing that might be suggested is that this company get or have made a map of all its territory on a fairly large scale. Such a map must be large enough so that it will show all streets and roads, all building lots, all railroads and all streams. With such a map you can spot all your present subscribers and all your present pole lines.

It is recommended that you have such a map made in the form of a tracing so that you can take off prints as needed to replace spoilt layouts or, for instance, to enter all utility plants in your territory. In other words you must first, unless you have already done so, prepare a map showing your present plant and also plant belonging to other utilities such as the gas company, the electric supply company, the railroads and the roads and streets.

If you plan on installing underground cable the probable routes to be used for such construction should be shown. Of course your present underground plant must also appear on your map.

With this preliminary layout before you it will be possible to plan present facilities and probable extensions. It is probable that when you have such a plan before you you will be confronted with a number of suggested modifications in your present indefinite plan. At that time you will be in position to give consideration to the type of plant you will install and its size. What is meant is that your final consideration will be placed upon a more definite set of ideas than would be possible without such a preliminary layout. You can then decide a number of factors which cannot safely be decided in the absence of such a preliminary layout as has been suggested. In your state such a plan will be of great value in your dealings with your regulatory commission also.

Possible Carrier Installation

QUESTION:—*We have an established toll connection with another company whose office is about 30 miles distant from ours. This connection consists of two well built circuits which have been in service for a number of years. Just recently the volume of interoffice toll traffic has increased until there are increasingly frequent periods in which the two present circuits are insufficient.*

As a result we have to use an alternative routing more often than is desirable because the overall wire

Cut overhead costs –

Increase Battery Life with

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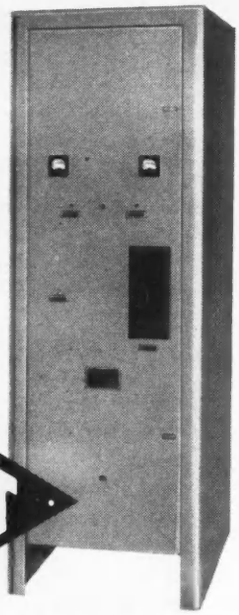

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FINEST ***AUTOMATIC REGULATED*** *TELEPHONE BATTERY CHARGERS...*

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INET Tele-Chargers are engineered to surpass critical requirements of the Telephone Industry.

Featuring Permanent Magnet Reference... finest magnetic amplifier controls and long-life selenium rectifiers provide the ultimate in dependable *automatic regulation* and maintenance-free performance.

Fully protected and conservatively rated—*cannot* be overloaded—exceptionally close voltage regulation—better than ± ¼% regardless of extreme AC line, wide load and frequency changes and variations in ambient temperature. Other outstanding characteristics are: Lightning-Fast Response—better than 0.1 second and Low Ripple—less than 0.5% RMS.

Compact, completely self-contained with all controls, circuit breakers and separate float and equalizer controls housed in modern heavy gauge steel cabinets. Units available with output ratings of 49 to 65 VDC at 0-50 to 0-1600 Amps.; 23 to 27 cells.

Write for complete engineering specifications.

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The proved and standard protection for Underground Telephone Cables. Highest quality and full line of shapes.

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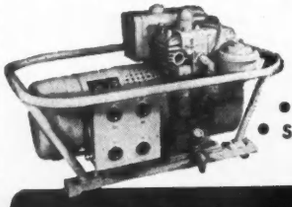

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Also Multi-frequency Ringing Power Equipment

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Katolight CORPORATION

Box 491-18 Mankato, Minnesota

distance is much longer, the transmission is not up to standard and some other conditions intervene which are not satisfactory. At the moment these two circuits appear to us to be in very good condition and some consideration is being given to the establishment of additional toll facilities by the installation of carrier.

Can you make some general observations on this suggestion that will be helpful to us in our study of the matter? Our service is very good both on our toll connections and in our local service plant and we do not wish to risk losing the present good will of the public by offering something that will be found to be inferior to our present standards.

ANSWER:—Any comments made in answer to this inquiry will, obviously, have to be of a very general character. The first thing that will have to be considered, it is not mentioned in the question, is the presence or absence of intermediate connections on either one or both of the present physical circuits. Such intermediate points do not make the project any less desirable but they must be taken into account. Then the two physical circuits must be surveyed to eliminate any conditions that might interfere with the use of carrier but would not have made themselves very evident as to the present service exclusively over the two physical circuits.

In all probability the present circuits are well maintained and have been carefully balanced out with no exposures to inductive interference from paralleling supply circuits. When the survey of the present two circuits has been completed it is suggested that the data be assembled and placed at the disposal of the manufacturer from whom you desire to purchase your carrier equipment.

On the bare facts available it is the opinion of QUESTIONS AND ANSWERS that you can install a very satisfactory type of equipment (probably package type) on these toll circuits, one or both, that will afford toll service equal in quality if not superior to the present service at a total cost which is only a fraction of that of equivalent physical plant. The survey proposed must give the full plant information, of course, type and gauge of wire, character of construction, trasposition scheme, ohmic re-

sistance, presence or absence of cable etc. You are advised to proceed only under expert and detailed advice however.

Repeater Theory

QUESTION:—*We believe that an explanation of the principles underlying the telephone repeater would be appreciated by many who have more or less to do with the care and operation of this kind of equipment. We have a set of telephone books which have been most useful in the everyday work of keeping our several small telephone offices in operation. However the material regarding the telephone repeater in this set is not very extensive and we have not been able to figure out the theory. This we should like to be able to do although we can depend upon our neighboring large telephone company for help when needed.*

ANSWER:—This is a timely inquiry and one which will be of interest to many telephone men who must keep the equipment in this class in operation but who now rely upon general instructions without an acquaintance with principles for the remedies for the common troubles. At this time the inquiry is to be acknowledged only with the announcement of an article to be published covering the methods of operation of this very important element in modern long distance service. In this way the basic principles can be set out so that the many modifications and applications of the equipment will be easily understood.—THE END.

Alabama Tel. Co. Receives $2,935,000 REA Loan

A $2,935,000 LOAN to the Alabama Telephone Co., Inc., Fayette, Ala., was approved last month by the Rural Electrification Administration. The allocation was the largest of six made by the agency during one week, totaling $5,000,000.

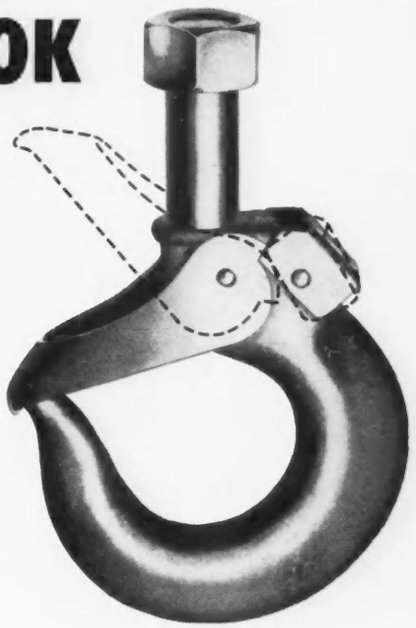
The company, which now serves 4828 subscribers over 491 miles of line in eight Alabama counties, will use the REA funds to improve and expand existing facilities in western Alabama to serve a total of 8357 subscribers.

About 1319 miles of new line will be constructed, 112 miles of existing line rebuilt, and the major portion of the present line used in the re-

Look at the Safety and Convenience Features in

COFFING'S NEW

SAFETY HOOK



You are invited to compare this new Coffing Safety Hook, and see for yourself its many advantages — in safety to men and equipment, in convenience and ease of use.

POSITIVE LOCK under spring tension securely holds the latch in place.

NO SIDEWAYS MOVEMENT POSSIBLE, because latch fits snugly over point of hook.

HIGHER TENSILE STRENGTH than any other hook of its size. Has drop-forged, heat-treated alloy steel construction.

NO RUSTING OR CORROSION to hinder use, because the hook is cadmium plated.

EASILY RELEASED — HELD OPEN — Slight pressure on the release unlocks the latch Spring tension on the release also holds the latch open.

LARGE THROAT OPENING allows full and unobstructed use of entire area inside the hook

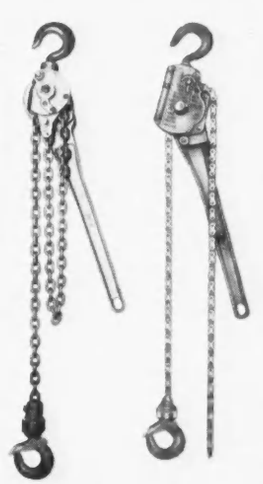
AVAILABLE FOR BOTH NEW AND OLD COFFING HOISTS

The Safety Hook is available on new Coffing Hoists you order, and you can also place it on Coffing Hoists already in service . . .

Send today for literature just published telling all about the outstanding new Coffing Safety Hook — just ask for Bulletin U-75H.

SAFETY-PULL RATCHET LEVER HOISTS

Models RG and RTG Coil Chain | Models AG and ATG Roller Chain



CHALLENGER SPUR-GEAR HOISTS

½- and 1-ton models

COFFING HOIST COMPANY

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Quik-Lift Electric Hoists • Hoist-Alls • Mighty-Midget Pullers • Spur-Gear Hoists
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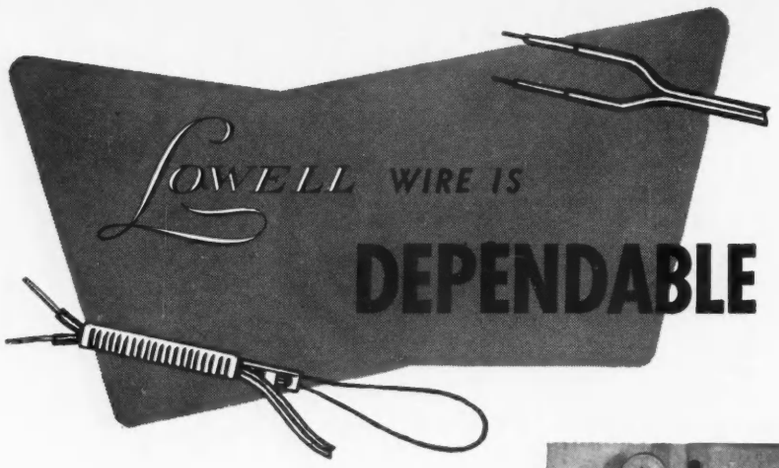
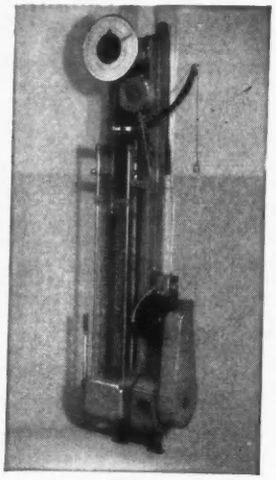
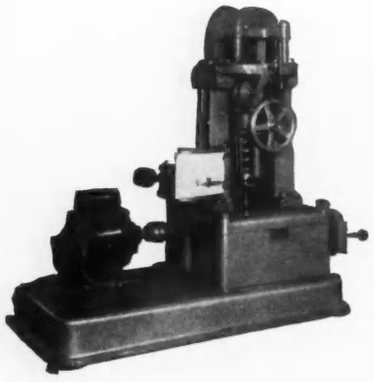
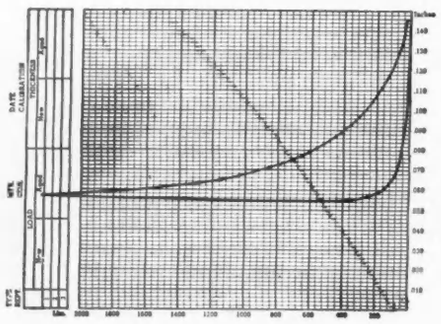


With labor and maintenance costs much higher today than some years ago, it is natural for telephone companies to insist on installing drop wire that will give long service. Dependability in Lowell's complete line of Telephone Wires is assured by a technical staff using many physical tests to determine the effect of heat, aging, tensile strength, compression, cold, acids, oils, moisture and abrasion. Tensile test machine at right which tests for adhesion enables us to guarantee that the adhesion bond between the insulation and conductor is stronger than the conductor itself.







Compression testing is essential in high grade insulated telephone wires. All Lowell parallel neoprene jacketed drop wire is tested in our laboratory to withstand pressure of 2000 lbs. or more before the insulation jackets are crushed. Since resistance to compression determines the quality of the adhesion these tests prove that Lowell Drop Wire will stand the crushing action of the P Clamp without cracking of the insulation or jacket, thus insuring dependability and long life in service.

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LOWELL INSULATED WIRE DIVISION
OF The Overlakes Corporation
171 LINCOLN STREET ... LOWELL, MASSACHUSETTS

novated system, which will consist of 1800 miles of facilities.

A newly-organized cooperative, the Southeastern Indiana Rural Telephone Co-op., of Osgood, Ind., received a $700,000 allocation to acquire telephone properties now serving about 250 subscribers, and to build a dial system to serve a total of 1400 subscribers in three noncontinguous areas.

The co-op will build 335 miles of new line, and rebuild 215 miles of the acquired line. It will acquire the San Jacinto Telephone Co-op., the Cross Plains Telephone Co., and 90 miles of subscriber-owned facilities, and build four new dial central offices.

The Meadow River Telephone Co., Rupert, W. Va., now furnishing magneto service to 377 customers, will receive a $347,000 REA loan to rebuild its existing 100 miles of line, add 63 miles of new line, add 414 new subscribers, and convert to dial at its two central offices.

The Goldenbelt Telephone Assoc., Inc., LaCrosse, Kans., was given $515,000, with the recently-organized company to use the funds to construct a telephone system in five counties to serve 982 subscribers.

Its plans include acquisition of the Alexander Telephone Co., the Farmers Telephone Co. at Rozel, and access rights to the Albert Telephone Co., the Pivonka Farmers Telephone Co. at Nekoma. These companies now serve 764 subscribers over 478 miles of line. The finished system will consist of 499 miles of line.

A grant of $310,000 to the Washington County Rural Telephone Co-op., New Pekin, Ind., will convert the co-op's present system, now serving 215 subscribers over 33 miles of line, to dial operation and provide facilities to serve an additional 522 families.

The Lewis (Kans.) Telephone Co. was granted $193,000 to finance construction of a modern system serving 400 subscribers. The program includes acquiring the Edwards County Mutual Telephone Co. at Lewis.

Montana Co-op Signs Construction Contracts

CONTRACTS totaling $829,264 for 1,847.06 miles of rural telephone lines and town cabling were let last month by the Mid-Rivers Telephone Cooperative, Inc., Circle, Mont.

LARGE OR SMALL

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Whether your need be for spools—screw eyes—knobs—guy strain insulators—Porcelain Products 60 years experience assures you better products. Preferred by installers everywhere, this equipment is dimensionally accurate to A.T. & T. specs. These insulators will give you and your customers long reliable service. Write for complete information.

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CONTROLLED BY AN AUTOMATIC, LIGHT-ACTIVATED ELECTRONIC EYE WHICH LIGHTS THE BOOTH AT DUSK AND TURNS IT OFF AT DAWN.

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- **Steel Covering**
- **Easily Installed**
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ELECTRONIC **Ripley** CONTROLS

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Commission NEWS Briefs

A review by Telephone Engineer editors of recent rulings, decisions and orders issued by regulatory bodies.

Rate Hike Approved for Illinois Company

THE NATIONAL TRAIL Telephone Co. has been authorized to increase telephone rates $6,043 a year in Altamont, Beecher City, Brownstown, and St. Elmo, the Illinois Commerce Commission announced recently.

Under the new schedule, rates to 2-party residence service will increase $3.00 to $36 a year.

Carolina Company Will Establish New Exchange

THE NORTH Carolina Utilities Commission last month authorized the Norfolk & Carolina Telephone & Telegraph Co. to establish a telephone exchange at Kill Devil Hills on the Outer Banks.

The exchange will serve Kill Devil Hills, Kitty Hawk and Nagshead in the Dare County coastal area. The commission said the exchange will replace limited toll station service.

Because of the higher demand during summer months when tourists flock to the beach area, the commission approved the company's plan to require a 12-month contract with new subscribers. Six months payments would be required in advance.

Nebraska Commission OK's REA Project

THE NEBRASKA Railway Commission has announced its approval of plans of the newly formed *Rodeo Telephone Membership Corp.*, Burwell, to take over and expand existing facilities in that area.

The plans involve purchase of three systems.

The new company is buying the Burwell exchange of the Nebraska Continental Telephone Co. of Columbus for $46,150; the property of the Garfield Mutual Telephone Association of Burwell for $20,000; and the property of the Farmers Telephone Co. of Taylor for $7,800.

Expansion plans include extension of telephone facilities to 475 farm and ranch families.

The program is being financed with a $637,000 loan from the Rural Electrification Administration.

The Burwell project is the first to be launched in Nebraska under the REA's telephone program, a commission spokesman said.

The rate schedule approved for the new corporation is $7.50 per month for one-party business service and $4.75 for one-party residence service, with rates for other classes of service in proportion.

Kansas Commission OK's New Rural Cooperative

THE KANSAS Corporation Commission recently authorized a new REA telephone association, the South Central Telephone Association, Inc., Pratt, Kans., to serve eight South Central counties.

The South Central Association will serve parts of Barber, Harper, Comanche, Kiowa, Pratt, Stafford, Reno and Kingman counties. It is buying exchanges at Sun City, Sharon, Iuka-Byers, Lake City and Turon, now serving 783 customers, for $54,000.

KCC chairman, Jeff Robertson, said the new co-operative was authorized to issue membership certificates not exceeding $10,600, equity certificates not exceeding $34,150, and a note for $497,000 to the Rural Electrification Administration.

The association, Robertson said, plans to rehabilitate the present properties, extend service to more rural customers, and convert all telephones to dial. Its new plant, he said, will cost $477,300, giving it a total plant value of $495,000 when completed. It plans to serve 1,060 customers.

Smith and Snow Elected To S. Carolina Commission

WINCHESTER Smith has been re-elected to a four-year term on the South Carolina Public Service Commission, it was reported last month. At the same time, John J. Snow was elected by the legislature to a four-year term on the commission, replacing F. B. Hines.

Atherton Named to New Hampshire Commission

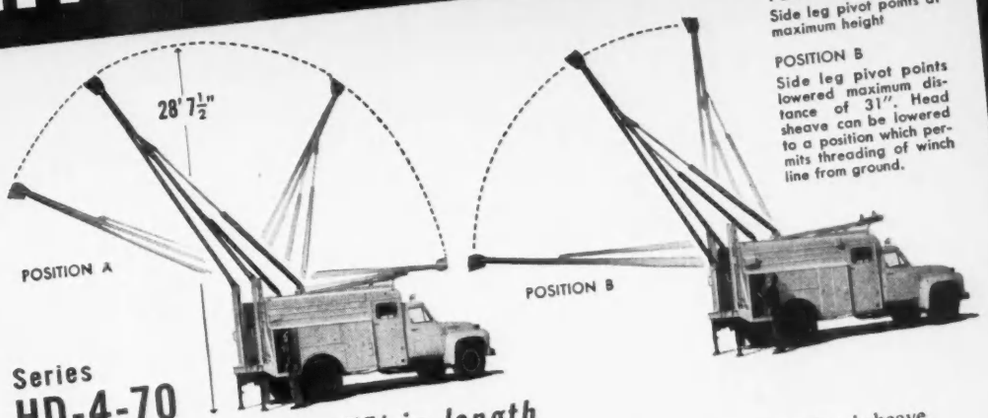
BLAYLOCK ATHERTON, who has a long record of public service in New Hampshire, has been appointed to the state's Public Utilities Commission, to fill the term of Henry G. Wells, who died recently. Commissioner Atherton, an insurance execu-

"QUOTE"

"Nobody can be sure in advance of what the near future holds, but there is comfort in the fact that 'risk capital' — the kind that takes a chance in helping to make a profitable prosperity — has not succumbed to the defeatist theory that good times depend on government spending of money which the government does not have." — (Bellingham, Wash., Herald)

POWERS American

"Pole-Master" HYDRAULIC DERRICKS



POSITION A
Side leg pivot points at maximum height

POSITION B
Side leg pivot points lowered maximum distance of 31". Head sheave can be lowered to a position which permits threading of winch line from ground.

Series HD-4-70

Handles poles up to 75' in length

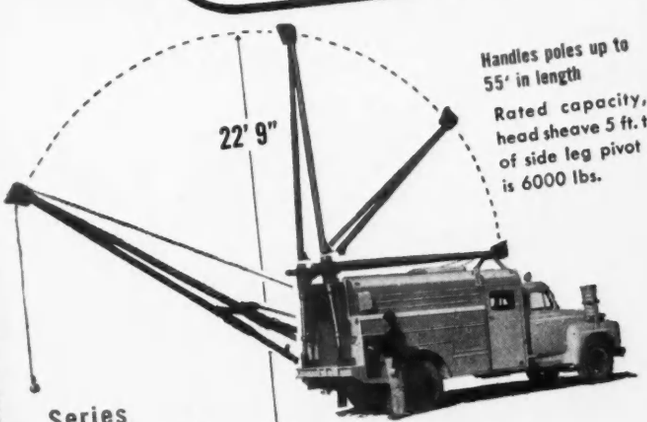
This is a heavy-duty derrick which can be operated by one man. Every movement—from carrying position to any point within the operating range—is hydraulically actuated. Shifting of control levers is the only manual requirement.

The derrick can be spotted in any position selected by the operator . . . and can be moved under load.

What's more, the position of the head sheave can be raised or lowered a distance of 31" . . . hydraulically . . . without changing angle of elevation.

With head sheave fully extended, 5 ft. to rear of side leg pivot points, the derrick has a capacity of 9000 lbs.

Complete details are given in Powers-American Bulletin No. 407. A copy, with quotation, is yours for the asking.



Handles poles up to 55' in length

Rated capacity, with head sheave 5 ft. to rear of side leg pivot points, is 6000 lbs.

- LIVE BOOM—CAN BE OPERATED UNDER LOAD
- HYDRAULIC HEIGHT ADJUSTMENT
- CAN BE USED WITH SINGLE-DRUM WINCH
- NO BODY LOAD AREA OBSTRUCTION—NO DANGEROUS EXPOSED MECHANISM

Series HD-2-55

Operation is completely hydraulic. Insertion and removal of locking pins, and shifting of control is the only manual requirement.

The derrick can be spotted in an unlimited number of positions, and moved while under load. It will lift loads to body cargo area.

Descriptive Bulletin No. 405R, with quotation, will be sent on request.

SERIES HD-2-40 Same as above, with 20' 10" ground-to-head sheave height.

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McCABE-POWERS AUTO BODY COMPANY
5900 NO. BROADWAY • ST. LOUIS 15, MO.
428 LATHAM SQ. BLDG. • OAKLAND 12, CALIF.

tive and broker, served six terms in the state House of Representatives and as President of the state Senate, and in 1952 was acting Governor of New Hampshire. His terms expires in June, 1959.

Perrine Asserts Rate Case Time Can Be Pared

GEORGE R. PERRINE, chairman of the Illinois Commerce Commission, last month said that recent cases before his commission have proved that the time required for rate proceedings can be cut to a "reasonable minimum."

He addressed business men and lawyers attending a New York symposium on legal problems confronting utilities.

Perrine said that at hearings on Commonwealth Edison company's application for a rate boost last year the commission permitted the company to introduce prepared statements of its witnesses.

The new rate schedules were filed by the company June 25, hearings commenced Sept. 28, and were completed by the end of the year. The commission handed down its order last Jan. 16.

"All of the company's direct testimony and exhibits were in the hands of the commission at the start of the case," he said. "Additional testimony and exhibits likewise were made available to the commission promptly after they were introduced.

"In this manner the commission was given ample time to study the case and was in a position to enter its order without delay. As a result, the commission was able to dispose of one of the most important rate cases in its history in approximately half the time customarily required."

FCC Relaxes Rules For Radio Grants

THE FCC recently loosened its standard metropolitan area eligibility criteria in the special industrial radio service. Under the interim policy set up, prospective radio users in regions of low population density —even when within standard metropolitan areas as defined by the rules — can qualify on a case-by-case basis as special industrial licensees pending finalization of the FCC's pending rule making docket in that service.

All radio grants made under the new eligiblity clause will be made, however, subject to the outcome of the FCC overall rule making in the special industrial service.

Illinois Commission Chairman GEORGE R. PERRINE tells New York group rate case time can be reduced.

Stock Issue OK'd By Carolina Commission

THE NORTH CAROLINA Utilities Commission last month gave the *Matthews & Waxhaw Tel. Co.* permission to issue $50,000 worth of additional stock and borrow $100,000 from the Chase National Bank of New York.

Rate Increase Approved for Kenesaw Telephone Co.

THE NEBRASKA State Railway Commission recently approved the application of the *Kenesaw (Neb.) Telephone Co.*, for authority to increase rates and charges for telephone service.

Based upon present station development, the proposed rates will produce additional gross revenue of $217 per month or $2,604 per year.

Under the new rates, the company's total annual telephone operating revenue is estimated to be $14,543.91. Total annual telephone operating expenses are estimated to be $14,129.87 exclusive of taxes estimated to be $672.53 which results in a net loss of $258.49 per year.

Brief Hearing on Wisc. Tel. Purchase

FCC EXAMINER Harold L. Schilz last month presided over a brief hearing of the application of the

Construction and

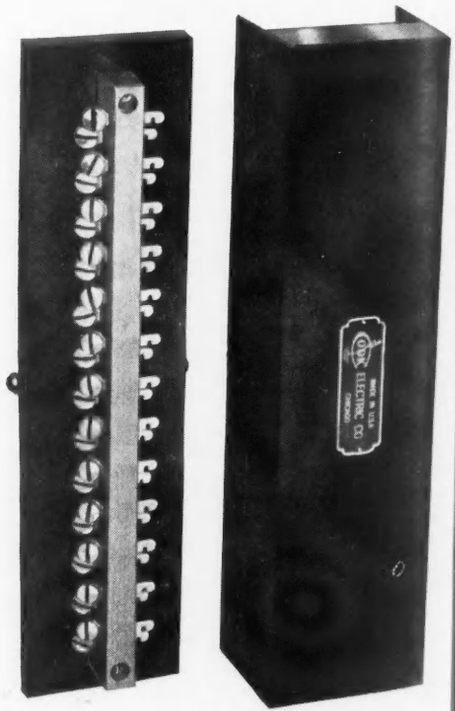
WITH THE DOUBLE

STROMBERG-CARLSON

LEADING

cook's type 53

interior junction box



Designed for use in P.B.X. installations, in small unattended exchanges and for the floor distribution of cables in factories, offices and stores where screw connections for drop wires are desired—with *economy*. Wooden base; enameled metal cover. Solder clips on Cable side; screw connections on drop side. Furnished in 13 and 26 pair capacity.

Mfd. by Cook Electric Co.

materials & Supplies

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AND AMERICA'S

MANUFACTURERS

the battery that lasts practically forever

gould planté

For long life and uniform dependable service, no other telephone battery equals the Gould Planté. It has rolled up amazing performance records, remaining in active full-float service for 20 years, 30 years and longer!

In the Planté, *all* of each positive plate is pure lead, containing *no* antimonial impurities. Thus, Gould has eliminated the primary cause of self-discharge, capacity losses and shortened battery life. Planté batteries float at constant voltage and maintain rated capacity all their life. Because they almost never need service, maintenance is negligible. If you would cut battery costs to a minimum, choose Planté.

Made by GOULD-NATIONAL BATTERIES, INC.

telephone cable

pre-tested to operating company requirements

by KENNECOTT

The construction or maintenance engineer judges telephone cable on three points:

1. Efficiency of transmission
2. Uniformity and quality
3. Long life

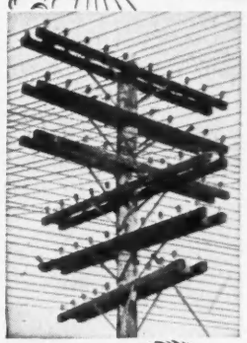
Kennecott knows this and, before a foot of cable leaves its mill, subjects it to five critical tests:

1. Dielectric Strength
2. Insulation Resistance
3. Conductor Resistance
4. Capacitance
5. Fixed Dimensions

These are everyday specifications. In addition, Kennecott's staff of electrical engineers works constantly to increase the efficiency of its products.

"dependable" *means both the trade-mark & the guarantee of cross-arms by*

American Cross-Arm Inc.



The finest pole and wire installation is useless if cross-arms fail. "Dependable" Cross-Arms are all that the name implies—made of sturdy, American woods, long seasoned, fashioned and finished to stand every weather condition from desert heat to mountain blizzards.

In Douglas Fir—Creosoted Yellow Pine or Gulf-Red Cypress.

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High Fidelity Radios and Radio-Phonographs

Office Intercom Equipment

Electronic Carillons for Churches and Public Buildings

Sound and Public Address Systems

"Panoramic Vision" Television Receivers

AND MANY OTHER ELECTRONIC PRODUCTS FOR OUR ARMED FORCES

Build Good Will

By BENJAMIN F. FEINBERG

Chairman, New York Public Service Commission

ONE WAY of establishing good will is the proper handling of complaints. A customer who has a grievance should be heard as a friend and should be made to feel that his complaint will receive prompt and courteous attention. We all know that some complainants are unreasonable, that their grievances exist more in disturbed imagination than in fact. We in the Commission are well acquainted with this type of complainant. But even with this type a kindly approach is the wise course.

In a sense, a complaint by a subscriber as to the service you render can be interpreted as a compliment. No one, except people who are emotionally disturbed in some way, raises an issue over things that do not matter. When a customer comes to you with a grievance he is in fact telling you that the function you are performing in his home or in his business matters greatly, that it is of vital concern to him, that he cannot get along without the service you are providing. It is extremely worth your while, therefore, to go all out to satisfy such a customer, to change him from an aggrieved antagonist to a friendly member of your customer family.

Cultivation of public good will is not a job for management alone. The entire personnel of the company should be trained in this respect. In fact, I would go so far as to say that your task of building public confidence must start with your own staff. By enlisting the employe's interest in the company's public relations problems you give him a sense of responsibility and make him feel that aside from the specialized task he is performing, he is in a larger sense an important functionary and has a community of interest with the management.

The most important characteristics required for the cultivation of good will are, of course, courtesy and friendliness. Some persons have much greater aptitude in this respect than others. But practically everybody can cultivate these characteristics. A repairman who restores an out-of-order telephone in a home and expresses regret over the annoyance caused the subscriber, can often change a dissatisfied family into a group of friendly boosters for the company.

Of course, you cannot put public confidence or good will in your rate base. You cannot show it as an item in dollars and cents on your balance sheet. Nevertheless, your balance sheet, in a sense, mirrors the confidence that the public has in you personally and in your business and even though you cannot put good will in your rate base it does pay off.—(*Adapted from a paper presented at the* 1954 *Convention of the New York State Telephone Association.*)

Wisconsin Telephone Co. for a certificate that its acquisition of the *Van Dyne (Wisc.) Telephone Co.*, which serves about 200 subscribers, is in the public interest. The purchase agreement, which has been approved by the Wisconsin Public Service Commission, calls for a price of about $7500. John O. Walch, general comm. engr. of Wisconsin Telephone was the only witness called during the hearing.

Commission Denies Red Cloud Rate Hike

THE NEBRASKA State Railway Commission recently denied the application of *Farmers Independent Telephone Co.*, for authority to increase exchange service rates. The company provides telephone service to approximately 559 subscribers in Red Cloud, and to approximately 190 service station customers in the adjacent rural area.

Based upon present station development, the proposed rate increase of 25 cents per month on all classes of service would produce additional gross revenue of $187.25 per month or $2,247 per year. An analysis of the case, after giving effect to the proposed rates and estimated expenses, reveals that applicant's total annual telephone operating revenue would be approximately $35,239.11 and total annual telephone operating expenses would be approximately $30,001.98 exclusive of taxes estimated to be $2,254.75, which would result in a net return of 11.20 percent on an adjusted net book rate base of $26,622.44.

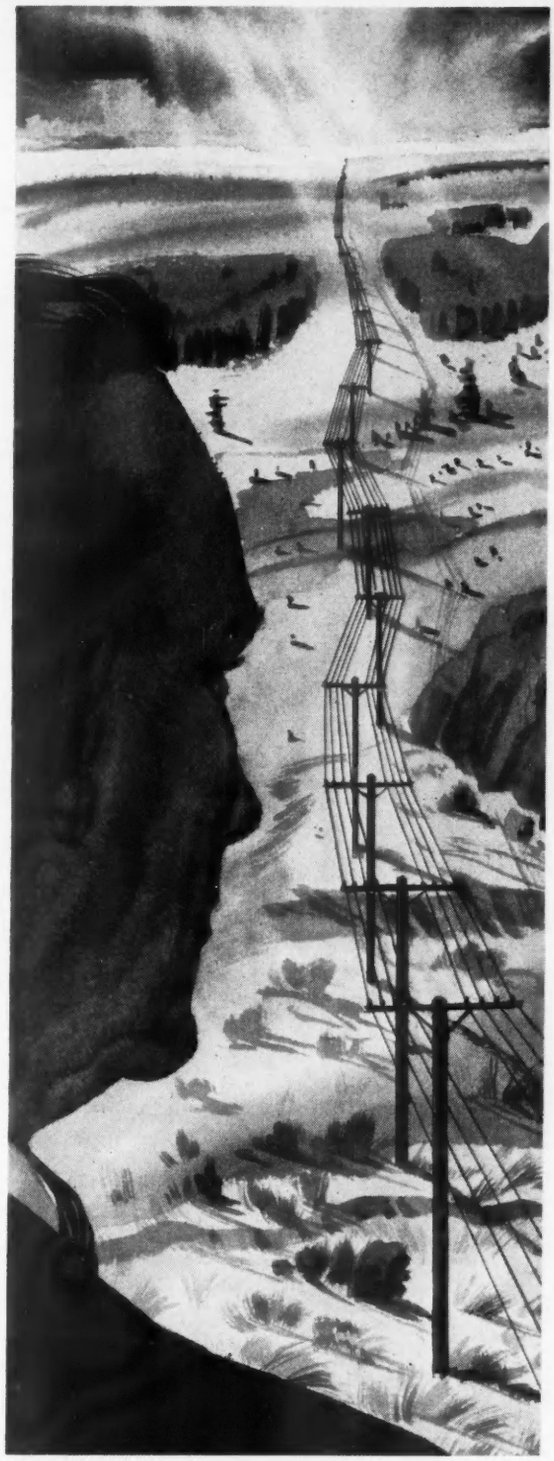
Upon consideration of the application, the analysis of the case, and the files and records, the Commission ruled that:

(1) The rates proposed by applicant would produce an excessive rate of return upon its investment.

(2) Applicant's present revenues are adequate to pay all operating expenses and taxes and leave a sufficient amount to enable applicant to pay its debt charges, to pay a reasonable dividend on its stock, and to provide a reasonable amount for surplus.

(3) Applicant has failed to prove its need for additional revenue and the application should therefore be denied.

AUTOMATIC ELECTRIC — LEADERS IN CARRIER COMMUNICATION — LENKURT



WILL *your* NEW CARRIER CONVERT TO TOLL DIALING ECONOMICALLY?

Lenkurt Carrier *will*—much easier, quicker, and at far lower cost than any other carrier!

What does this mean to *you?* Protection for your carrier investment when you convert your small exchanges from manual to unattended automatic operation, and when you adapt to nationwide toll dialing!
You can use Lenkurt Carrier now to provide toll circuits on a ringdown basis; then when you convert to automatic operation, you can easily and quickly convert these circuits to provide dial trunks.

How do you convert Lenkurt Carrier from ringdown to dialing? By merely changing two simple plug-in-relays! There's no bother with expensive conversion kits, adapters, replacement of panels, no extensive rearrangements. You convert in a matter of *minutes!*

Remember, too: there's no need to build additional costly copper toll circuits when you can provide extra channels more economically with carrier. Follow the lead of dollar-wise telephone men and look into the many advantages you get only with Lenkurt Carrier.
Write today. Our engineers will be glad to help you.

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Makers of Telephone, Signaling and Communication Apparatus • Electrical Engineers, Designers and Consultants

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1033 West Van Buren Street, Chicago 7, U. S. A.

TELEPHONE ENGINEER & MANAGEMENT'S

HANDBOOK DATA SHEETS

Prepared By

JOHN S. REED

Data on Prestressing and Tensioning or Sagging Self Supporting Cable — (Continued)

Table XI—Sag and Tension Installation Data—No Ice or Wind Load
Self-Supporting Ankoseal Telephone Cable
11-pair No. 19 AWG—Type 775-P-SS
(Based on Ansonia Data Sheets Nos. SS-1103, SS-1104, SS-1105)

Span Length in Feet	Sag in Feet for Temperature in Degrees F				Tension in Pounds for Temperature in Degrees F			
	0	30	60	90	0	30	60	90
				Heavy Loading District				
100	0.44	0.56	0.72	0.94	479	382	297	225
125	0.95	1.19	1.50	1.83	349	281	222	182
150	2.06	2.42	2.80	3.17	232	198	171	152
175	3.65	4.02	4.38	4.71	179	162	149	139
200	5.53	5.87	6.22	6.55	155	146	138	131
225	7.60	7.93	8.28	8.58	143	137	131	127
250	10.0	10.3	10.7	11.0	134	130	127	123
275	12.7	13.0	13.3	13.6	129	126	123	121
300	15.5	15.8	16.2	16.5	126	124	121	119
				Medium Loading District				
100	0.44	0.56	0.72	0.94	479	382	297	225
125	0.72	0.88	1.12	1.41	463	377	297	237
150	1.07	1.30	1.61	1.98	447	367	297	242
175	1.51	1.82	2.19	2.58	431	358	297	252
200	2.08	2.44	2.87	3.32	410	349	297	257
225	2.72	3.16	3.63	4.12	397	342	297	262
250	3.88	4.39	4.93	5.46	343	304	271	244
2.75	5.35	5.86	6.44	6.94	301	275	251	233
300	7.05	7.59	8.12	8.67	273	254	237	223
325	8.78	9.32	9.88	10.4	258	243	230	218
				Light Loading District				
100	0.44	0.56	0.72	0.94	479	382	297	225
125	0.72	0.88	1.12	1.41	463	377	297	237
150	1.07	1.30	1.61	1.98	447	367	297	242
175	1.51	1.82	2.19	2.58	431	358	297	252
200	2.08	2.44	2.87	3.32	410	349	297	257
225	2.72	3.16	3.63	4.12	397	342	297	262
250	3.44	3.94	4.48	5.01	387	337	297	268
275	4.33	4.86	5.43	5.98	373	332	297	270
300	5.29	5.87	6.46	7.06	363	326	297	272
325	6.36	6.93	7.58	8.22	353	322	297	275
350	7.53	8.18	8.79	9.42	347	320	297	278

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Trailer Camps Present Big Pay Possibilities for OUTDOOR PAYSTATIONS

Enterprising telephone men are finding trailer camps a rich source of outdoor paystation revenue. They say that business is good the year around—particularly at camps near defense plants and similar locations where people stay indefinitely. (What's more, they know that it's unwise to install telephones in trailers, for forgetful owners sometimes take the instruments with them.)

Put Autelco Paystations in modern booths and advertise them with big signs. Both trailer camp customers and owners will appreciate your thoughtfulness. And *you* will make money!

NOW READY! HELPFUL HINTS on developing paystation business, how to select equipment, full information on 5- and 10-cent paystations, conversion kits, accessories, booths, and signs, arranged for easy ordering. Send for new Catalog 4078-B today!

Product of the Telephone Specialty Department of

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PLANT NOTES

By RICHARD ALLEN

"Over the years, technical advances have made it possible to build more efficient facilities."

FOR FASTER SERVICE:—In striving for faster, more efficient service for customers, telephone people are continually using their ingenuity and skill to devise ways to do a better job.

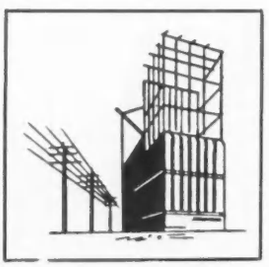
A case in point is a new ticket table for helping to handle delayed person-to-person long distance calls. Designed by A. T. & T. Co., Long Lines Traffic and Plant people, the new arrangement is now being tried out at Cincinnati.

The new table is being used in conjunction with an operating practice recently adopted throughout the Bell System. Under this practice, if the person called is not immediately available, the operator leaves with whoever answers the distant telephone the number of the calling party; the name, if volunteered; and a special number to call in the originating office. If the called party subsequently delivers this information to the operator in the originating office, she is able to complete the call at once without first locating the original ticket.

The ticket table at Cincinnati represents another step forward toward faster service. Connected with outward positions by means of a pneumatic tube arrangement, it provides a centralized location for the sorting and filing of all tickets on delayed calls, and thus helps to make these tickets more readily available. For calls without sufficient details and for special calls, such as coinbox, collect and "notify in three minutes," the CLR operator can make a quick check with the table operator and then go ahead and complete the call without keeping the customer waiting.

At present, intensive studies are being made on the performance of the new arrangement. If successful, it will be extended to other offices.

RURAL SERVICE: — More and better telephone service for rural areas, without adding more telephone lines, is promised by a new telephone system installed for trial near Americus, Ga., it was announced last month by Bell Telephone Laboratories.



By using the transistor, the new system permits many conversations to share a pair of telephone wires without interfering with each other and can operate economically over distances as short as five miles. The Georgia trial, in which the Southern Bell Telephone & Telegraph Co. is participating, will involve the first complete system of telephone equipment using transistors.

More than 300 transistors will be used in the equipment on trial. Advantage will be taken of the lower power requirements and the reduction in size of various parts which the transistor affords. This is expected to result in cutting the overall size of the equipment to about one-tenth of what it would be if vacuum tubes and their related equipment were used.

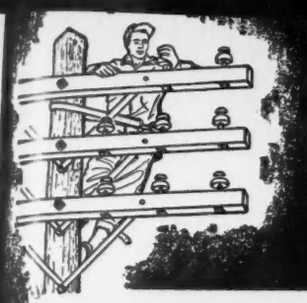
The Laboratories' announcement pointed out that it is this reduction in size and power requirements made possible by the transistor that has enabled engineers to design a system economical for such short distances. In this system, the transistors will require so little electric power that the batteries needed to supply it will be hung on the telephone poles with the transistors.

FIRST AID: — Two major changes in first aid care were announced recently by the American Red Cross and adopted by the Bell System. They deal with the application of tourniquets and injuries due to cold, and represent a radical departure from previous methods.

It is now recommended that a tourniquet should be applied close to the wound, with unbroken skin between it and the wound. Once the tourniquet has been applied it should not be released, no matter how long it has been in place, except by a physician. Previously, first-aiders were advised to apply the tourniquet high on the arm or thigh and to loosen it every fifteen minutes. The tourniquet should be used only for severe life-threatening hemorrhage which cannot be controlled by other means. Crushing wounds or large lacerations where large arteries are severed, or partial or complete severance of a body part are the only instances where application of tourniquets may be justified.

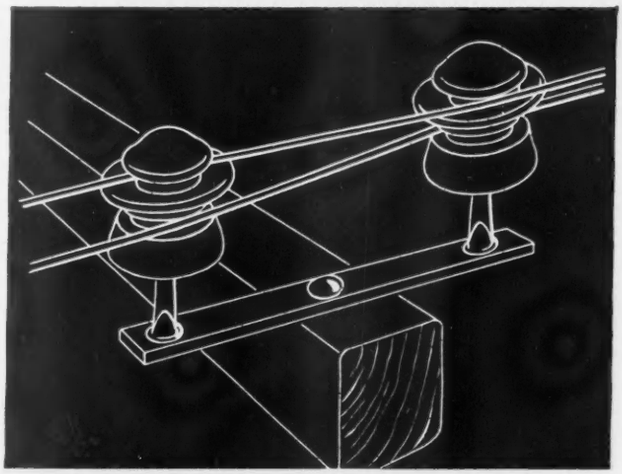
In the other major change, rapid warming is now advised for victims of frostbite or for persons who have suffered prolonged exposure to cold. Previously, first-aiders were advised to thaw out a frozen part gradually in cool water or in a cool room. Now they are told to bring a victim into a warm room quickly, and rewarm him as rapidly as possible by placing him in a tub of warm water, or by wrapping him in warm blankets.

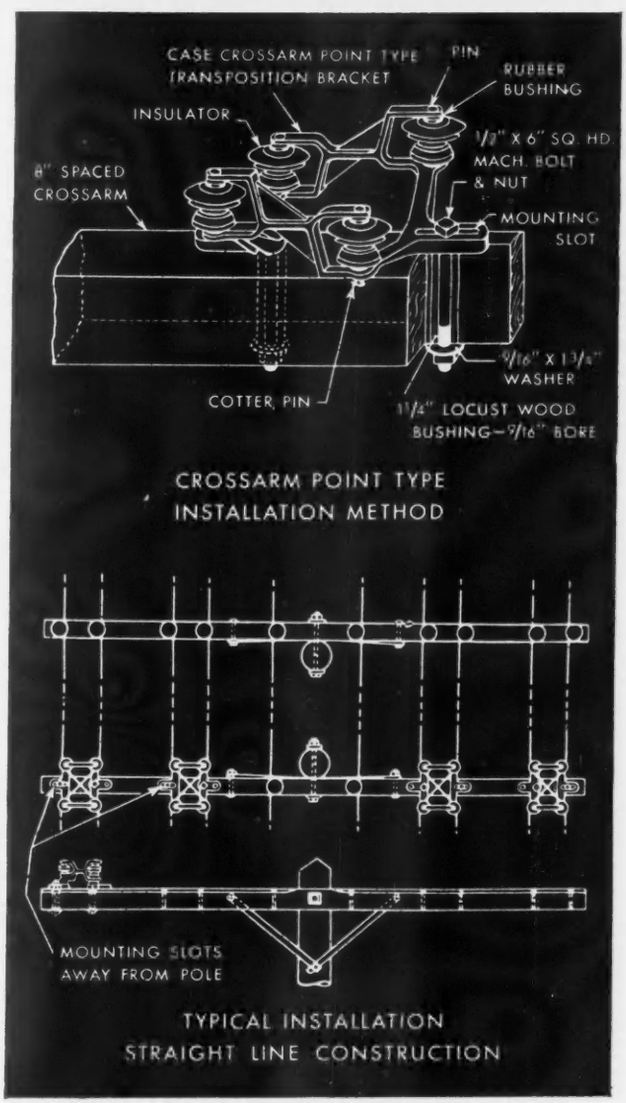
Until the victim of frostbite can be brought indoors, the frozen part should be covered with woolen cloth or clothing, and the victim warmed and given a warm drink. If the frozen part is still cold and numb, it should be rewarmed as rapidly as possible by immersion in lukewarm but not hot water, or by wrapping in warm blankets. Rubbing a frozen part is not recommended. After the part is rewarmed the victim should be encouraged to exercise fingers and toes.



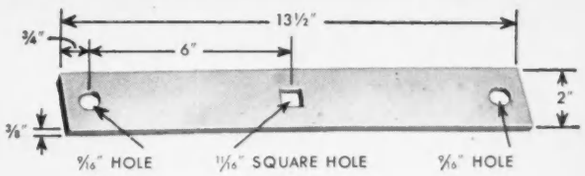
LINE CONSTRUCTION BLUEPRINTS

ITEMS SOME COMPANIES ARE USING TO MAKE LINE CONSTRUCTION WORK EASIER




CASE CROSSARM POINT TYPE TRANSPOSITION BRACKET
PIN
RUBBER BUSHING
INSULATOR
1/2" X 6" SQ. HD MACH. BOLT & NUT
8" SPACED CROSSARM
MOUNTING SLOT
9/16" X 1 3/4" WASHER
COTTER PIN
1 1/4" LOCUST WOOD BUSHING—9/16" BORE
CROSSARM POINT TYPE INSTALLATION METHOD
MOUNTING SLOTS AWAY FROM POLE
TYPICAL INSTALLATION STRAIGHT LINE CONSTRUCTION

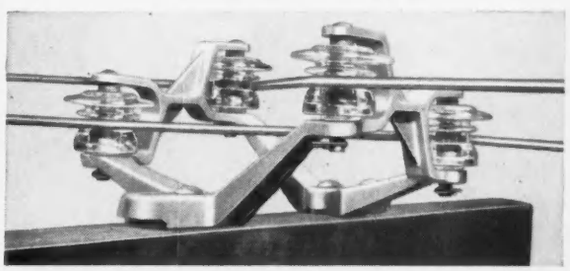
L-M TYPE "B" TANDEM TRANSPOSITION BRACKET



Used with transposition insulators for telephone line transpositions. Recommended for straight sections or at corners where pull is less than 15 feet. Heavy ⅜" x 2" steel, hot dip galvanized. REA-approved.

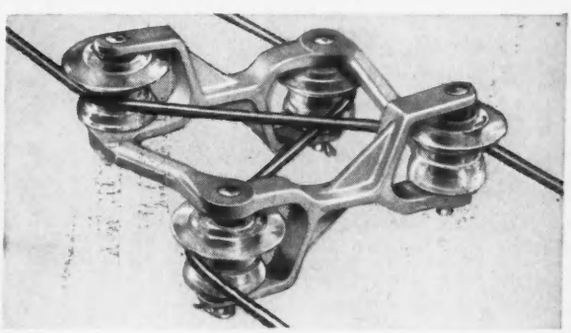
L-M CASE Roller Type TRANSPOSITION BRACKETS

Crossarm Point Type



Case Brackets equalize tension, balance lines, eliminate tie wires. Insulators *roll* easily as wire is tensioned—cutting installation time. Special rubber bushings set in insulators maintain continuity of service if insulators break. Available in crossarm and span point types, both of aluminum alloy. Weight—less than 4 pounds.

Span Point Type



Do you have a line construction problem?

These are just a few of thousands of L-M line construction specialties. If you have a line construction problem, let us know. We may have standard or special items in stock that will solve it. Ask the North Electric or Kellogg representative or the L-M Field Engineer. Line Material Company, Milwaukee 1, Wis. (a McGraw Electric Company Division).

LINE MATERIAL *Line Construction Materials*

119-R

They Died With Him!

This article appeared originally in the *Otis Bulletin*, edited for Otis Elevator Co. at Yonkers, N. Y., by James Truedeau. It has been quite widely reprinted in company publications and is reprinted here for the benefit of others who might be interested.

HE WAS BORN in an antispetic world, a world so exclusive no germ could invade its stainless steel and glass shell. A nurse's rubber-gloved hands cradled him gently, and dropped silver nitrate into his eyes to protect them against a remote threat.

Later on, he was vaccinated and innoculated against this and that. His mother took great pains to show him how to cross the street. She taught him to swim, how to care for his teeth, brought him a catcher's mask with money saved for her new hat.

His father was on the lookout, too. He sent him to the dentist regularly, called the doctor when the boy had even a slight fever, and paid the bills without a sigh. When the heating system began to age and coal fumes crept into the nursery, his father wouldn't be satisfied with patching: he took another mortage on the house to finance steam heat. Danger lurks everywhere for the young.

Perhaps you remember the boy when he was in high school. He was a big kid. Played football, good exercise when you're growing. He wore a helmet, and shoulder pads, and hip pads and special shoes. Cost a couple hundred to outfit each boy on the team, the coach said, but it was worth it. No one questioned that.

No one questioned the cost when he went off to war, either. In a war, there are many things you can't prevent. His country did everything conceivable to give him every chance, though, and once, when he was bivouacked just outside a little town in Italy, a British soldier fingered his helmet, looked over his socks, his shoes, his warm uniform and all the rest, and said admiringly, "They certainly think a bloomin' lot of you boys!"

So he came home safely. And he was married to the girl who worried so much while he was away that she sent him three letters every day. They moved in with his folks. Then he went back to school for a while (his father didn't mind the expense; he was just happy to have him back) studied electricity, and got a job.

He figured he could go far with Otis. He asked about the careers of a lot of men at the top, and was surprised at the number who had started out as mechanic's helpers. Good men became mechanics, local representatives, went on up. His wife had it all planned, and when the baby came she said, "When he's president of the company, you'll be a congressman, son." Such were the things he lived for and worked and studied for.

"Keep Your Eyes Open"

On the job, they gave him a hard hat to protect his head, protective glasses, gloves, helped him get shoes with steel in them to protect his feet. His foreman said, "Now keep your eyes open and your head on your shoulders. Don't listen to show-offs. Working up here isn't dangerous unless you make it dangerous. When you fly a plane, you use different rules than when you drive your car. It's the same up here. Just do your job and follow our rules and you won't get hurt.

"Without Thinking"

Well, he was an experienced field mechanic when it happened. The details are simple enough; he acted without thinking, and he fell.

All those people died with him, if you want to be honest about it — his wife, his folks, his closer friends. They protected him, everybody in his world protected him, but he failed to protect himself.—THE END

Construction and
WITH THE DOUBLE
STROMBERG-CARLSON
LEADING

the new **cane** *seat is cooler - cleaner - more comfortable...*

sturgis SC-240

Literally "by request"—this new operator's chair retains all the posture advantages for which Sturgis is famed and adds the cool, clean comfort of a *cane* seat. The posture-curved, well-cushioned back rest is covered in genuine leather.

The exclusive Sturgis "Follow-Flex" feature automatically adjusts to the operator's every movement, supports her restfully all the time, discourages fatigue, keeps her at top efficiency.

Other new and welcome features include a plastic-coated steel foot ring which retains its color and a handy purse holder, available on request. Six seat heights, all adjustable.

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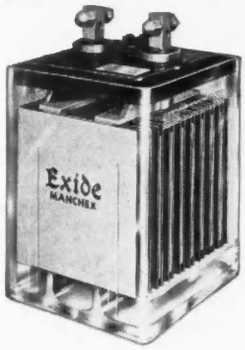
Exide-Manchex
telephone batteries



assure positive operation

For Central Office and Private Branch Exchange Equipment

This is proven daily in exchanges of every size ... for over 60 years Exide Batteries have been serving the Telephone Industry . . . the Manchester positive plate with its exclusive button type construction provides exceptionally long life . . . latest developments on molded glass jars permit compact space saving installation . . . heavy terminal posts with copper inserts provide extra conductivity for sustained voltage at high discharge rates . . . microporous rubber along with slotted plastic separators, are impervious to chemical and electrical reactions . . . plastic spacers assure plate alignment . . . for assured dependability, long life and low-cost maintenance use Exide Manchex.

The Electric Storage Battery Co.
Philadelphia, Pa.

1888 . . . Dependable Batteries for 66 Years . . . 1954

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Raytheon RectiFilteRs*!

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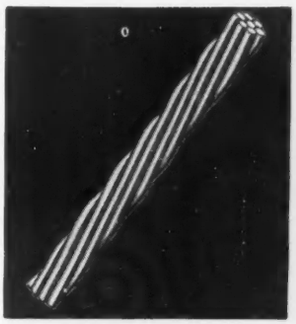

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Suppliers' NEWS Briefs

Bi-Seal Insulating Tape Now Available In Colors

BISHOP MANUFACTURING CORP., Cedar Grove, N. J., has announced the availability of "Bi-Seal," self-bonding insulating tape, in 7 colors — black, white, red, yellow, orange, green and blue. This new series is designed for interior use where color identification of lead wires is important.

Use of colored "Bi-Seal" saves time, not only because it eliminates an extra step in identification, but also because the characteristics of "Bi-Seal" make splicing and terminating of wires and cables quicker and easier.

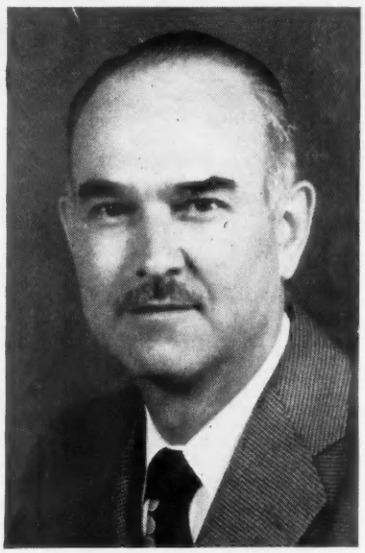
Made of polyethylene based compound, "Bi-Seal" is self-bonding. When applied, it fuses into a solid mass that creates a tight permanent seal over the splice. Because of its elasticity and mechanical strength, "Bi-Seal" molds itself into a perfectly conformed sheath over the most complex shape.

Announce Changes In Automatic Organization

THE FOLLOWING three new appointments in the staff of Automatic Electric Co., Chicago, have been announced by H. F. Lello, executive vice president:

John H. Gustafson, formerly factory superintendent, has been appointed manager of labor relations, and has taken over the duties formerly handled by the late Jules E. Gonseth in that position. Mr. Gustafson has gained a wide background of administrative experience in the manufacturing organization of Automatic Electric. Starting as a worker on the assembly line, he progressed through adjusting, testing, installation, inspection, and dispatching. His supervisory assignments have ranged from shop foreman to factory superintendent; he has held the latter position since 1944.

JOHN H. GUSTAFSON, manager of labor relations, Automatic Electric Co.



R. O. PENCE, superintendent of manufacturing, Automatic Electric Co.

HAROLD E. FOX, factory superintendent of Automatic Electric Co.

Harold E. Fox, formerly superintendent of manufacturing services, has been appointed to succeed Mr. Gustafson as factory superintendent. An Automatic Electric employe of 30 years' standing, Mr. Fox also has an impressive background of supervisory experience.

R. O. Pence, formerly assistant superintendent of manufacturing services, succeeds Mr. Fox as superintendent of manufacturing services. Mr. Pence came to Automatic Electric in 1942, and was for several years assistant to Mr. G. K. Beare, now vice president in charge of production.

L-M Completes New Manufacturing Facility

COMPLETION OF a new 30,000 square foot building at Line Material Co.'s Central Plant has been an-

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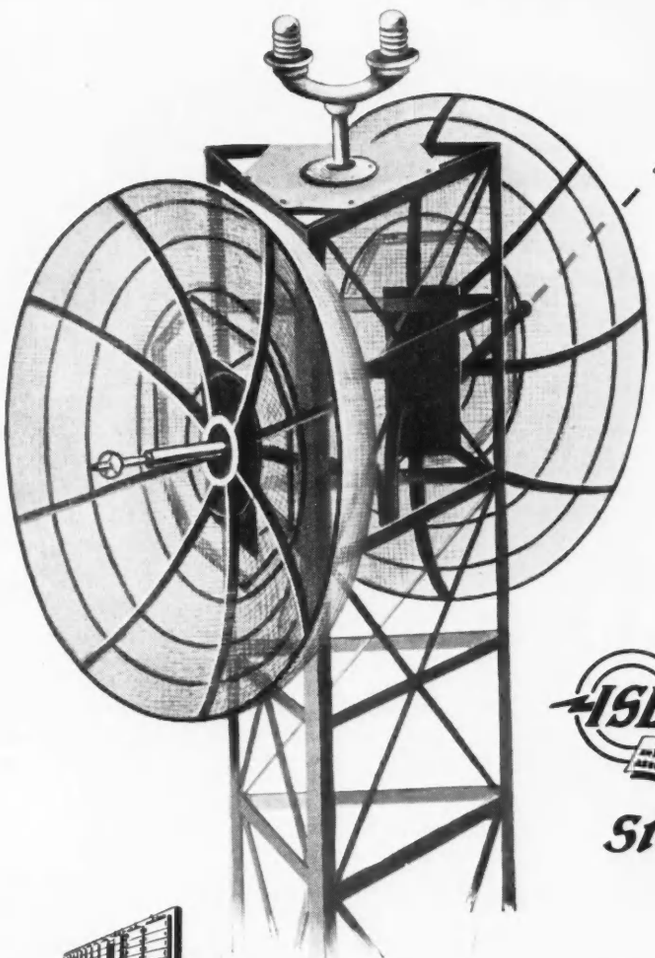

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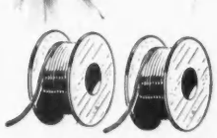

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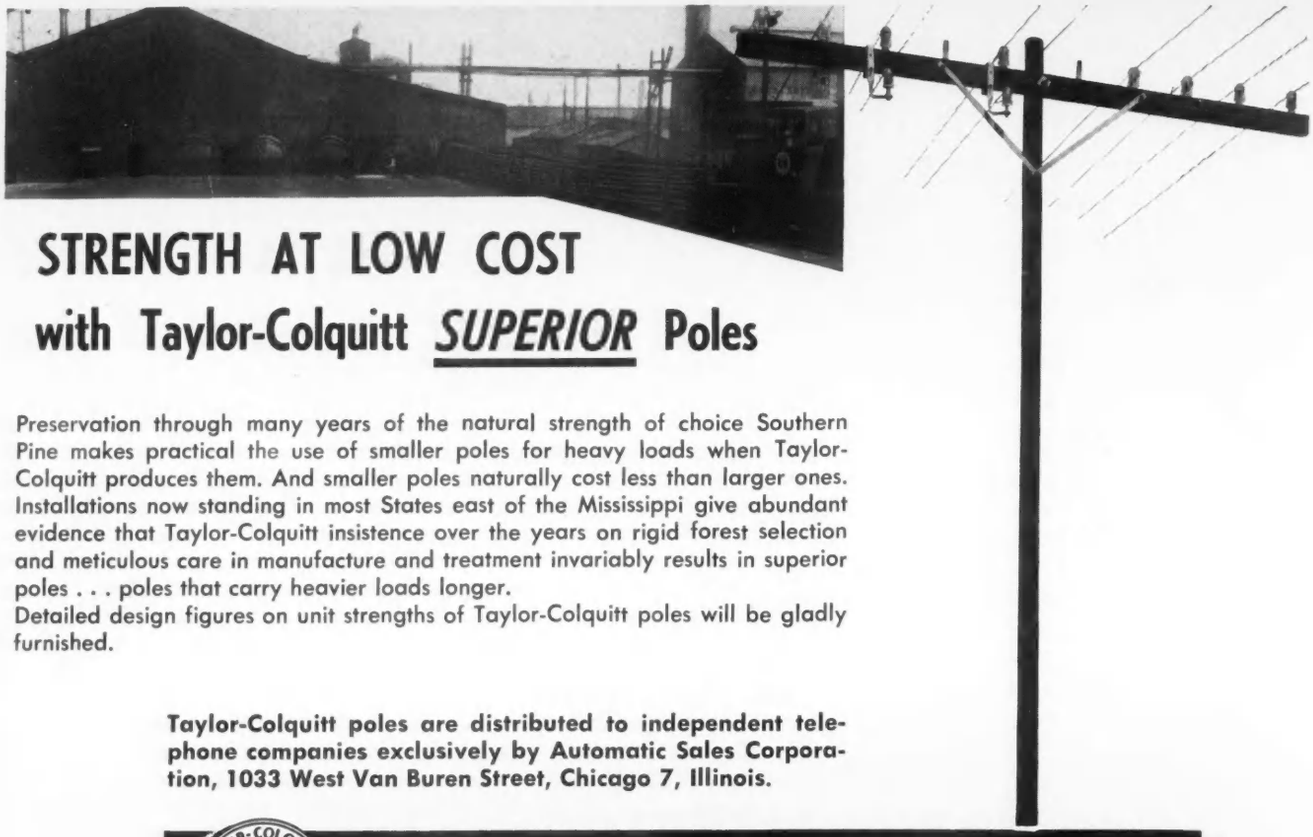

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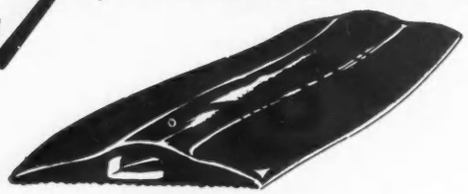

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nounced by W. D. Kyle, Jr., president and general manager. The new production facility is part of an $800,000 expansion program undertaken earlier this year. One-half million dollars were earmarked for the company's Central and Kyle Plants, both in South Milwaukee, Wis., while the balance is being used for improvements in L-M plants at Zanesville, Ohio; East Stroudsburg, Pa.; and Macomb, Ill. The Kyle Plant addition of 40,000 square feet will be completed late in June.

American Steel & Wire Advances F. T. Clarke

ANNOUNCEMENT OF the appointment of Frank T. Clarke as manager of sales of American Steel & Wire Division's District Sales offices in Boston was made last month by Ross F. Curtis, Eastern Area manager of sales of this United States Steel unit. In this advancement, Mr. Clarke returns to his native Boston where he succeeds A. N. Murdock who retired on May 31.

Born in 1901 in Boston, he was graduated from Dorchester High School in 1918. He joined American Steel & Wire there in 1921 as an office assistant in the warehouse. He held various posts as clerk and correspondent in the warehouse until 1930 when he was promoted to salesman in the manufacturers' department. In 1940, he was transferred to the New York City sales offices as assistant manager in the same department. He spent the war years heading up the Division's Washington office handling products for the war effort.

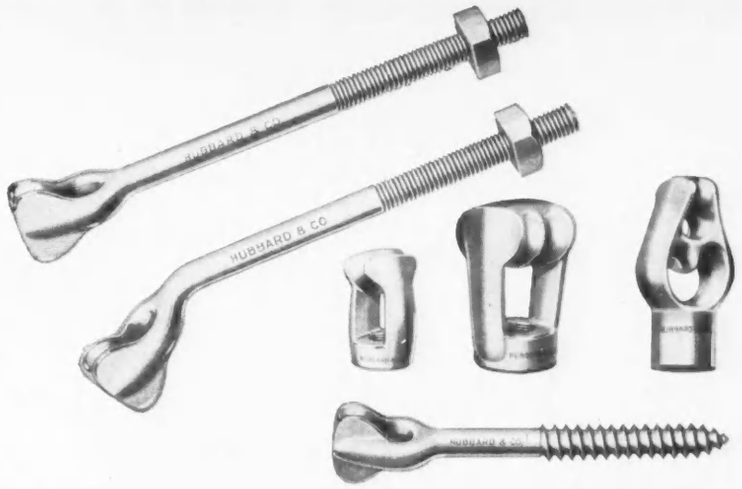
Promoted to director of cold rolled strip sales in 1947, he spent the following two years in Cleveland. In 1949, he was named manager of manufacturers' products in New York — the last position he held at the time of his elevation to manager of sales in Boston.

Burgess-Manning Develops New Telephone Booth

BURGESS-MANNING CORP., 5970 Northwest Highway, Chicago 31, Ill., manufacturer of telephone booths, announced last month that it has started production of a triangular-shaped booth that encloses only the head and shoulders of user.

The company said the triangular shape permits placing two of the booths in a room corner where only

HUBEYE BOLTS, EYES, AND NUTS



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one conventional type would fit and sound-absorbing material between double walls adds to acoustical qualities. The booth will be marketed for $100, compared to the normal price of $220, company stated.

General Electric Names Clark To Texas Post

THE GENERAL ELECTRIC Co. has announced the appointment of R. G. Clark as district sales manager for communication products in south central Texas, with offices at 335 New Moore Building, San Antonio, Texas.

In this position, which has been newly created to more adequately serve the growing south Texas area, including the Rio Grande Valley, Mr. Clark will direct sales and distribution of General Electric communications products.

The appointment was made by L. Robert Sheeley, manager of sales for G-E communication products, a unit of the company's Commercial Equipment Department at Electronics Park.

Since joining the General Electric Company in 1952, Clark has served as communications specialist with the New Orleans office of the company.

McGinnis Joins Koppers Wood Preserving Div'n

THOMAS J. MCGINNIS, for the past three years manager of the central Control Section of Koppers Company, Inc., has been named assistant to the vice president and general manager of the Wood Preserving Division.

IRVING T. BENNETT whose election as chairman of the board of General Cable Corp., was announced by the company last month. Mr. Bennett will continue as the company's chief executive officer, a position he has held since August, 1953

The Ansonia Wire & Cable Co. has announced that HUGO W. BISKEBORN has joined the engineering and production staff of the company. Ansonia President, Alden P. Lunt, said Mr. Biskeborn will initially assume the duties of methods and planning engineer and will be located at the main office of the company at 63 Main Street, Ansonia, Conn. Mr. Biskeborn comes to the company with many years of engineering and research background in the non-ferrous metals and insulated wire and cable field.

Succeeding Mr. McGinnis as manager of the Control Section is S. K. Dee, former assistant manager of the central staff unit.

Mr. McGinnis, who joined Koppers as organization administrator in 1946, is the author of the company's detailed organizational manual.

A native of Chicago, Ill., Mr. McGinnis was awarded a Bachelor of Science degree in Mechanical Engineering by Purdue University. For four years he was a test engineer with the Norge Division of Borg Warner Corporation before joining the Link Belt Company in 1940 as a design engineer. From 1942 to 1946 Mr. McGinnis served in the Ordnance Department of the U. S. Army in which he rose to the post of assistant chief of the Industrial Division of the Chicago Ordnance District with the rank of Major.

Mr. Dee is a native of Concord, Mass., and was awarded a Bachelor of Arts degree in economics by Williams College. Following four years of sales work in New York, Mr. Dee served as a government statistician from 1935 to 1943. During World War II, he held the rank of Lieutenant in the U. S. Navy and was as-

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signed to the Army-Navy Petroleum Board of the Joint Chiefs of Staff. He joined Koppers as reports administrator in the Central Control Section in 1946.

Onan Announces New Sales Promotion-Advertising Setup

THE SALES PROMOTION Department of D. W. Onan & Sons, Inc., Minneapolis, Minn., has been expanded to include the advertising responsibilities of that firm. This new combination sales promotion and advertising operation was announced by Hiram Hascall, general sales manager.

George Burda, sales promotion manager of the firm for two and one-half years, will direct the combined department. He has been actively engaged in the sale of Onan Electric Generating equipment since 1942. He formerly was regional manager of the Eastern United States sales territory.

Copperweld Appoints Darbaker Senior V. P.

FRANK R. S. KAPLAN, president of Cooperweld Steel Co., recently announced the appointment of James M. Darbaker as senior vice president, effective June 1, 1954. He also has been elected a member of the board of directors. Mr. Darbaker will make his headquarters in the company's executive offices, Frick Building, Pittsburgh, Pa.

Widely known in the steel industry, Mr. Darbaker has held various important administrative, production and sales positions with the United States Steel Corp. for 34 years.

JAMES M. DARBAKER, senior vice president, Copperweld Steel Co., Pittsburgh, Pa.

A native of Vandergrift, Pa., Mr. Darbaker was graduated from the University of Michigan with a B. S. degree in Mechanical Engineering. At the age of 38, he became general superintendent of the sheet and tin mills of Carnegie-Illinois Steel at Gary and Ellwood, Ind. Later, Mr. Darbaker was made manager of operations in the Chicago district. In 1949, he was transferred to Pittsburgh and advanced to general manager of sales. From this position, he was promoted in 1952 to director of distribution and availability for the United States Steel Corp.

GEORGE HAMBURGER, manager of Communication Sales for the Wire & Cable Division of Copperweld Steel Co., has moved his headquarters from St. Louis to Washington, D. C. From company offices in the Shoreham Building, he directs Communication Sales throughout the United States. He also represents Copperweld's Wire & Cable Division in connection with Government activities. Prior to these responsibilities, Hamburger was Copperweld's district sales manager in St. Louis. Mr. Hamburger attended the School of Electrical Engineering at the University of Colorado from 1930 to 1934, and has since become widely known in the electrical field. He is a member of the A.I.E.E., the A.I.M.E. and the Armed Forces Communications Association.

Electric Regulator Names New Sales Manager

W. HAMILTON WALTER, until recently assistant chief of the Mutual Security Agency in Great Britain, has been named sales manager of Electric Regulator Corp., Norwalk, Conn., it is announced by Arthur M. Cohen, president of the company.

Before joining the Mutual Security

W. HAMILTON WALTER, until recently assistant chief of the Mutual Security Agency in Great Britain, has been named sales manager of Electric Regulator Corp., Norwalk, Conn.

Agency in 1950, Mr. Walter had overall responsibility as coordinator of sales for Raytheon Manufacturing Co., Waltham, Mass. A former vice president in charge of sales for the North Electric Manufacturing Co., Galion, Ohio, he was for 18 years a top sales, staff, and line executive of the Automatic Electric Co., of Chicago and its affiliates, including Associated Telephone & Telegraph Co.

In the MSA post, until his recent return from England, he was in charge of production supporting activities and off-shore procurement, in the Anglo-American effort to increase British industrial output following the end of the war.

L-M Names New Product Manager

LINE MATERIAL Co., Milwaukee, Wis., has promoted George W. Cooper from apparatus engineer to manager, protective and switching equipment sales. According to Albert R. Waehner, director of product management. Cooper succeeds Robert D. Cleaves who has accepted the position of general sales manager, Anderson Brass Works, Inc., Birmingham, Ala. Cooper assumed his new duties in L-M's Milwaukee headquarters on July 1.

G. W. Cooper

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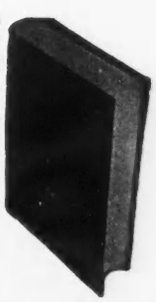

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ment, Cooper had been apparatus engineer in the company's East Central Division with his office in Cleveland. An E. E. graduate of Linsly Institute of Technology, Cooper joined L-M in 1941 after several years of utility and industrial experience. He was employed initially in the company's transformer plant, Zanesville, Ohio, and in 1948 he was appointed apparatus engineer. While on a leave of absence from July, 1951, to June, 1952, Cooper served with the NPA as chief, transformer section, electrical equipment division. He is a member of AIEE and a registered professional engineer in Ohio.

Hughey & Phillips Names West Coast Representative

HUGHEY & PHILLIPS, Inc., Burbank, Calif., manufacturers of tower lights and accessories, control and alarm equipment, and complete tower lighting kits, has announced the appointment of Maydwell & Hartzell, Inc., as west coast sales representatives.

With offices in Los Angeles, San Francisco, Seattle, Portland and Phoenix, the Maydwell & Hartzell appointment is the latest move in a program to acquire complete national sales representation, according to J. H. Ganzenhuber, Hughey & Phillips vice-president and general manager.

Koppers Wood Preserving Announces Appointments

TWELVE PROMOTIONS and appointments reflecting the expansion of the wood preserving activities of Koppers Company, Inc., following the purchase of American Lumber & Treating Co., were announced last month by Walter P. Arnold, vice president and general manager of the company's Wood Preserving Division.

Several appointments incorporate top personnel of American Lumber & Treating into the management structure of the Wood Preserving Division.

With the recent acquisition, Koppers obtained 10 wood treating plants in nine states, three of which are on the West Coast, as well as patent rights to several valuable salt treatments, including Wolman treatment, the world's most widely used salt preservative for wood.

Appointment of two assistant vice presidents of the Wood Preserving Division, Douglas Grymes, Jr. and Paul Wayman, was announced by Mr. Arnold. Mr. Grymes will continue to serve as sales manager of the Wood Preserving Division. Mr. Wayman, a former vice president of the American Lumber & Treating Co., will become assistant manager of the Division's Eastern Region.

RICHARD H. FROST, who was elected director and executive vice president of National Pneumatic Co., Inc., and Holtzer-Cabot Divisions, at a recent board meeting. Mr. Frost joined the company in 1947 and prior to his present position, was assistant to the president.

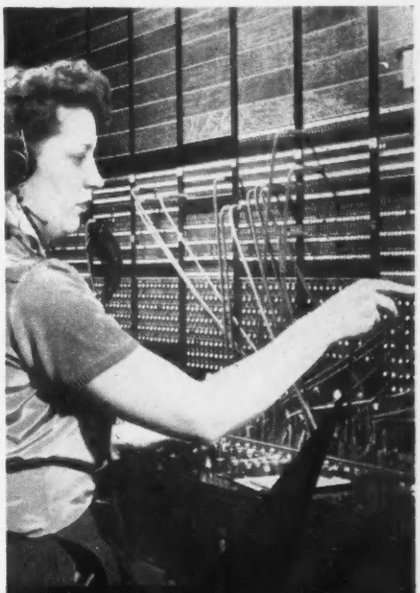
D. A. Mitchell, who has been assistant to the vice president and general manager of the division, has been named manager of the newly-formed Pacific District incorporating the Wilmington, Calif.; Wauna, Oregon; and Everett, Wash. plants, and sales offices at San Francisco and Los Angeles, Calif.; Portland, Oregon; and Seattle, Wash.

Mr. Mitchell will be joined by J. R. Cooper as procurement manager of the new Pacific District.

Among the several sales management appointments announced by Mr. Arnold is that of R. B. Putman, former sales manager of American Lumber & Treating, as manager of the newly-created Wolman Preservative Department of the Wood Preserving Division.

Both R. H. Devine and D. C. Smith have been named assistant sales managers of the Division. Mr. Devine formerly was assistant to the sales manager. Mr. Smith has been sales manager of the Division's Pittsburgh District.

Succeeding Mr. Smith as sales



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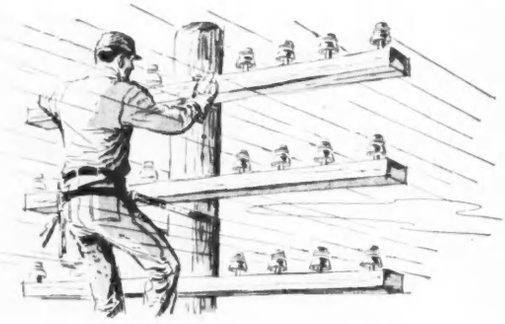

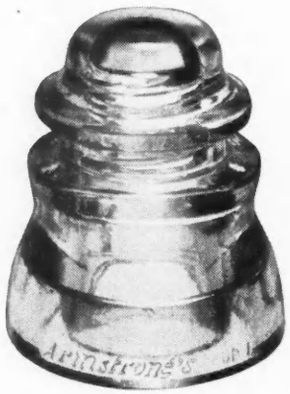

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manager of the Pittsburgh District is M. R. Clifton who has been sales manager of the Baltimore Area.

New Baltimore Area sales manager is C. D. Bird who has been district sales manager of the American Lumber & Treating Co.

L. A. Pisegna has been named sales manager of the Montgomery, Ala., area.

New assistant manager of the Finance Department of the Wood Preserving Division is H. H. Humphreys, who formerly held the post of secretary & treasurer of the American Lumber & Treating Co.

D. E. Curtice, former general superintendent of the American Lumber & Treating Co., has been named assistant general superintendent of the operating department of the Wood Preserving Division.

Automatic Names Clark Chief Electronics Engr.

Dr. Daniel E. Clark, research engineer in charge of transistor development for Automatic Electric Co., Chicago, Ill., has been appointed chief electronics engineer. This is a newly created executive position according to K. W. Graybill, vice president of research and engineering, and corresponds in the electronics field to the recent appointment of L. L. Ruggles as chief telephone engineer in the telephone field.

Dr. Clark will give executive direction to the use of electronics in Automatic Electric's products. Automatic Electric's staff engaged in electronics is being enlarged and the scope of this activity is steadily being broadened with the objective of taking full advantage of advancements in the electronic art.

Dr. Clark attended Northwestern University in Chicago, from which he received a Bachelor of Science Degree in Mechanical Engineering in 1929, a Bachelor of Science Degree in Electrical Engineering in 1930, and a Doctor of Philosophy Degree in Physics in 1935. Dr. Clark has served on the faculty of Northwestern University as an instructor in Electronics. He has honorary membership in Sigma Xi and Tau Beta Pi, and has been an active member in the Institute of Radio Engineers and the Western Society of Engineers.

In addition to his 10 years' em-

ployment at Automatic Electric, Dr. Clark has been employed by R. W. Hunt & Company, Armour Research Foundation, and the Shakeproof Division of Illinois Tool Works. His experience has been varied, including acoustics, apparatus design, the study of circuit phenomena, and the technique and theory of quality control.

For the past two years Dr. Clark has devoted his time to the manufacture, evaluation, and application of transistors. Under his direction laboratory facilities and pilot plant production of transistors have been established to provide the basis for a continuous and intensive study of transistors and their application in products manufactured by Automatic Electric.

Clifford, Pa., Cut To Dial Operation

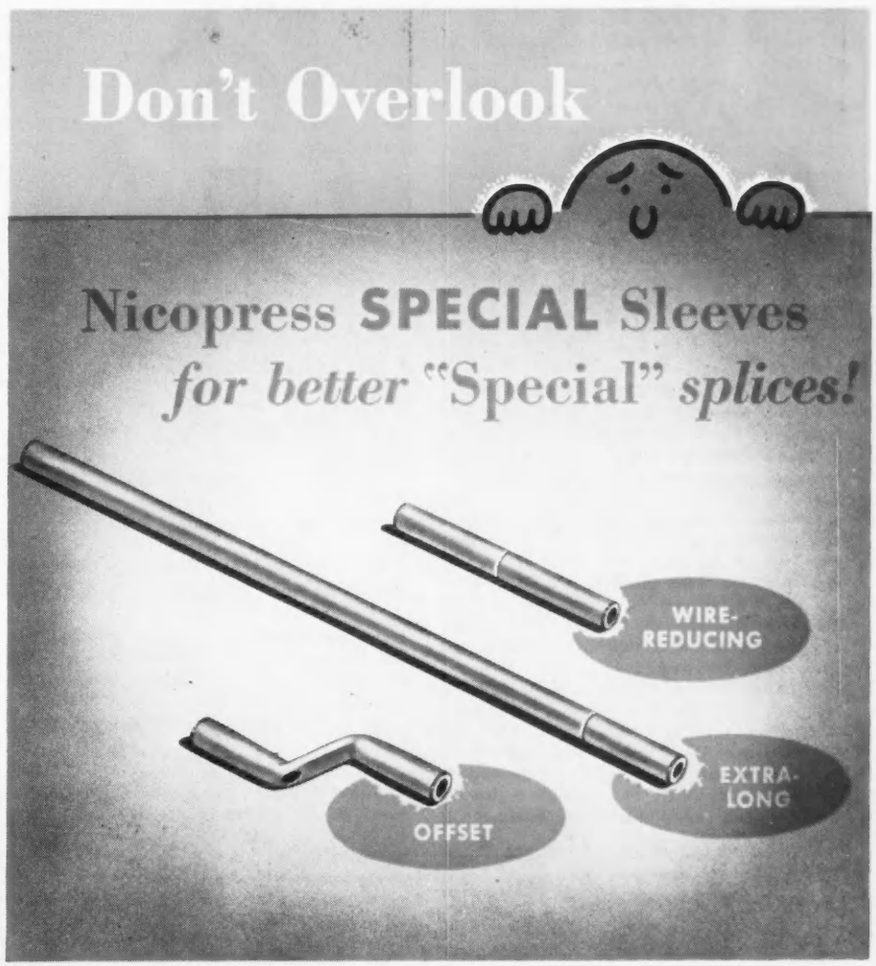
THE NORTH-EASTERN Pennsylvania Telephone Co. converted its Clifford, Pa., exchange to dial last month. The Clifford exchange serves 415 stations.

The Clifford cutover is number one in North-Eastern's dial conversion program, which is expected to cost approximately three quarters of a million dollars. The company furnishes service in parts of Wayne, Susquehanna, Lackawanna and Wyoming Counties to over 2,900 stations, through eight exchanges. The next conversion is expected to take place late this year at Pleasant Mt., Pa. Other exchanges to be converted on the schedule of dial conversions are Uniondale, Harford, Jackson, Thompson, New Milford and Forest City.

The Clifford conversion was the culmination of planning and engineering and rehabilitation of the telephone property which started in 1952. To accomplish the conversion it was necessary to erect a new brick fire-proof building at Dundaff, which is the wire-center; install 150 lines of automatic equipment; construct seven miles of cable and rewire all stations, as well as place new telephones in all homes and business places, at an estimated cost of $150,000.

Earl Tourje, secretary and general manager of North-Eastern, started with the company as a lineman in 1905 and has witnessed many changes throughout the area. Other officers and directors of the company are: Edward Maile, president; Robert J. Spencer, County Commissioner of Susquehanna County, vice president; Boyd H. Todd, treasurer, and J. D. Brennan.

The Wisconsin Manufacturers Association last month elected their youngest president in 43 years as RUFUS SCHRIBER JR., president of United States Motors Corp., Oshkosh, Wis., took over the leadership of the Wisconsin Association and its widespread program. Forty-year old Schriber, in addition to being president of United States Motors Corp., heads two export firms, United States Motors Americanas, Ltd. and United States Motors Internationl, Ltd., and is vice pres. and director of the Morgan Co., Oshkosh.



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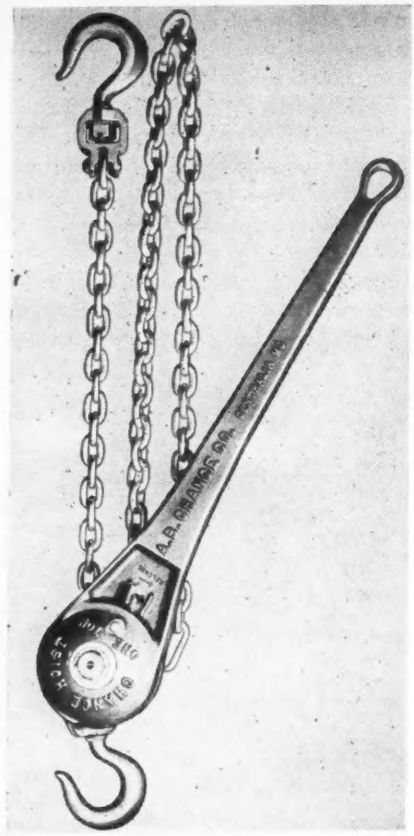
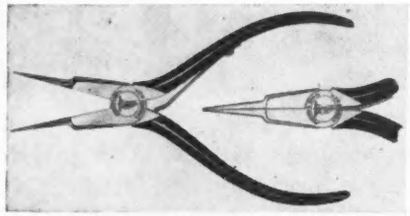


NEW PRODUCTS' SHOWCASE

HOIST:—The A. B. Chance Co., Centralia, Mo., has announced the manufacture of a new chain type hoist rated to lift loads up to one ton. This hoist was especially designed for line construction and maintenance jobs.

The housing and handle are made of aluminum with a hardened steel shaft. Controls of the hoist can be easily worked by linemen without removing heavy work gloves or rubber gloves. The chain is placed in "free-wheeling" by merely flipping a control lever. This lever automatically locks when the hoist is pulling a strain so that a load cannot be accidentally dropped.

The hoist features a flexible steel load chain that will not kink or uncouple. The chain can be operated with either half-link or full-link take-up. All of the working parts of the hoist are completely enclosed in the housing preventing any injury to linemen's fingers. — For Complete Data, Check New Product 638.

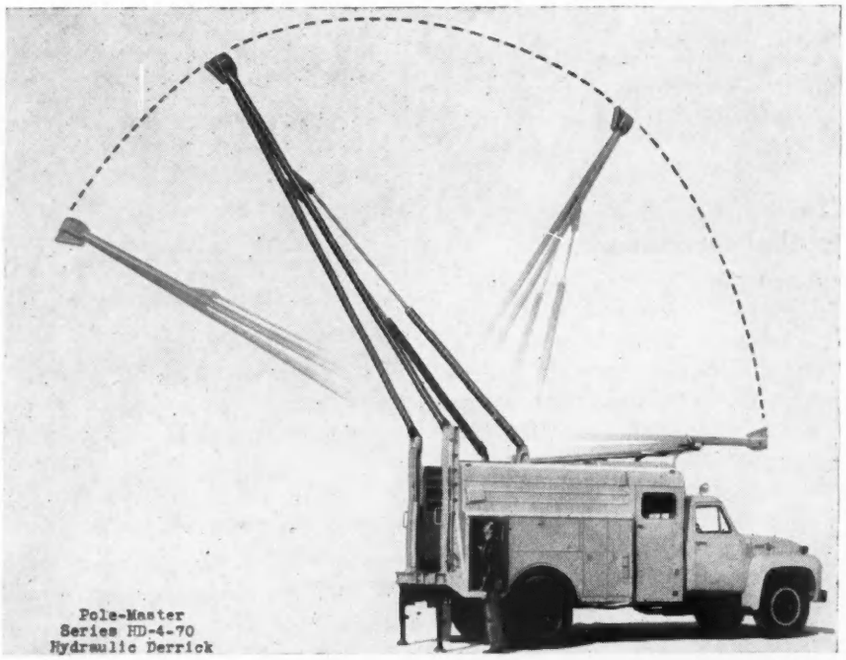


NEEDLE-NOSE PLIER:—Mathias Klein & Sons, 3200 Belmont Ave., Chicago 18, Ill., now offers a special needle-nose plier for precision work and delicate wiring of all kinds.

The plier is designed with an extra-long needle nose, severely tapered to a point less than 1/16-inch. A replaceable tempered steel spring keeps the plier in open position, ready for immediate use. Like all Klein Pliers, this special needle nose plier is forged from high-grade tool steel, individually fitted, tempered, adjusted and tested. Over-all length is approximately 6-¾ inches.

Refer to No. 301-6-SCP-L for plier with leaf spring, and No. 301-6-SCP for plier without leaf spring. For pliers with cutters on shoulder, refer to 203-6-SCP-L (leaf spring), 203-6-SCP (without leaf spring).

For Complete Data, Check New Product 639.



Pole-Master
Series HD-4-70
Hydraulic Derrick

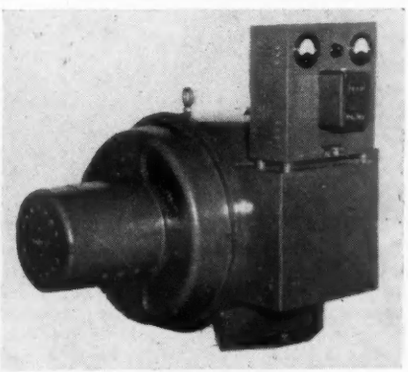
POLE-MASTER: — The Powers-American Division, McCabe-Powers Auto Body Co., 5900 N. Broadway, St. Louis 15, Mo., has announced an addition to its Pole-Master line of hydraulic derricks. The new unit, designated Series HD-4-70 Pole-Master, will handle poles up to 75 feet in length, according to Brooke Daly, company vice president. Movement of the derrick is actuated by two pairs of hydraulic cylinders which are driven by a power take-off installed on the chassis transmission. One pair of cylinders is used for spotting the boom, and the second pair for raising or lowering the head sheave a distance of 31 inches.

Twin positioning cylinders, attached to side legs and body roof, move the boom to any point throughout an arc of nearly 180 degrees. There are no pre-determined stops. Height adjustment cylinders, to which side legs are anchored at rear of body, permit the working height to be changed without altering the angle of elevation.

The derrick does not obstruct the body load area, and has no exposed mechanism to endanger workmen. It can be used with a single-drum winch, and will lift loads to any point in the body cargo area.

Rated capacity, with head sheave fully extended five feet to rear of side leg pivot points, is 9000 pounds. All movement is controlled by levers located in a rear compartment of the body on which the derrick is installed. Shifting of control levers is the only manual operation required.

Complete details are given in the company's bulletin number 407 which can be obtained by writing Powers-American Division, McCabe-Powers Auto Body Company, 5900 North Broadway, St. Louis 15, Mo., or by Checking New Product 640.



GENERATOR: — Katolight Corp., Mankato, Minn., has announced a new series of revolving field type AC generators streamlined and up to 35% smaller physically than previous designs; with frames of strong fab-

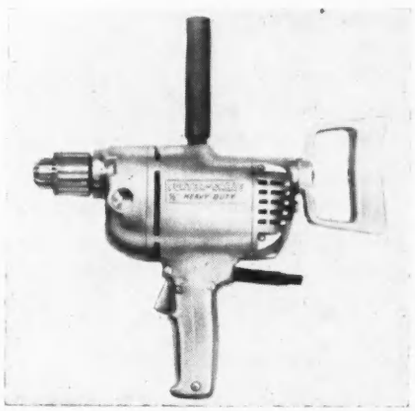
ricated steel construction, oversize ball bearings and equipped with cast iron endbells and direct connected exciters.

Available in 1800 rpm, four pole, 3 phase, 60 cycle from 208 to 600 volts, in sizes from 60 to 150 KW. Also available in single phase, 115/230 volts from 40 to 100 KW. The new series also includes 1200 rpm, 6 pole, 60 cycle, three phase models in sizes 40 to 100 KW and 30 to 60 KW, single phase.

The generators can be had in either two bearing construction or single bearing for direct engine adaption. The generators will maintain a voltage regulation of ±2½% with an automatic voltage regulator.

They are of Class A insulation with temperature rise less than 50°C by resistance or 40°C by thermometer except on the 100 KW, 1200 rpm size which is 52°C to 53°C rise by resistance. The efficiencies (depending on the size) are between 90 and 94 per cent.

Fifty cycle generators are available at 83% of the capacity ranges given above. For free descriptive bulletin, Check New Product 641.



ELECTRIC DRILL:—A new heavy-duty ½" electric drill has a powerful 6-ampere motor that develops 45% more chuck twist power than other leading drills in its price class, according to Locked-Rotor Torque Tests by the manufacturer, Porter-Cable Machine Co., Syracuse, N. Y.

The drill, Model 516, is surprisingly compact and light for its heavy power. It weighs only 10 pounds and measures 14-¼" long, 3-½" wide and 9-⅞" high. The rear spade-type handle is adjustable for vertical or horizontal position, or may be removed entirely in cramped quarters. An auxiliary two-position handle permits the operator to apply more pressure and maintain accuracy. A trigger switch provides finger-tip control, with a push button lock for one-hand operation. The drill has a ½" gear type chuck for positive slip-proof grip on bits. Bit capacity is rated at ½" for steel and 1-⅜" in wood.

Eight ball bearings and double compound reduction gears assure maximum sustained drilling power. Helical teeth on armature pinion and first reducing gear provide greater strength and quieter operation. The entire housing is made of durable aluminum alloy and has a commutator cover which can be easily removed to permit inspection and service. Brush holders are accessible from the outside.

A universal 115 volt AC-DC motor drives the chuck at 550 rpm. The spindle offset is 1-⅛". Standard equipment includes gear chuck, key, key holder, auxiliary handle, spade handle and 10 foot electric cord.

Porter-Cable also makes a heavy-duty ¼" drill and two standard-duty models. For complete details, prices of drills and catalog of 40 other portable electric tools—Check New Product 642.

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BELTS — CLIMBERS — PLIERS — SAFETY STRAPS — CONSTRUCTION TOOLS. Klein & Sons, Mathias. 3200 Belmont Ave., Chicago 18, Ill.—[ADV. 4]

BOOTHS—Acoustic Telephone — Sherron Metallic Corp., 1202 Flushing Ave., Brooklyn 6, N. Y.—[ADV. 5]

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CORDS, Switchboard & Telephone — Runzel Cord & Wire Co., 4727-31 Montrose Ave., Chicago 41, Ill.—[ADV. 10]

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INSULATORS, Porcelain — Porcelain Products Inc., Box 300, Findlay, Ohio.—[ADV. 13]

LIGHTWEIGHT PULLERS — Coffing Hoist Company, 800 Walters St., Danville 5, Ill.—[ADV. 14]

PIPE PUSHERS — Giant Manufacturing Co., South 6th St., at 12th Ave., Council Bluffs, Iowa.—[ADV. 15]

POLE HOLE DIGGERS — For derrick mounted trucks. Tele-E-Lect Products, Inc., 9613 Minnetonka Blvd., Minneapolis 16, Minn.—[ADV. 16]

POLES, Southern Yellow Pine — Colfax Lumber & Creosoting Co., Inc., P. O. Box 23, Pineville, La.—[ADV. 17]

POLES, Southern Yellow Pine — Taylor Colquitt Company, 290 E. Main St., Spartanburgh, S. C.— [ADV. 18]

POLES, Southern Yellow Pine — Texas Creosoting Co., Orange, Texas.—[ADV. 19]

PROTECTIVE EQUIPMENT — Reliable Electric Company, 3145 Carroll Avenue, Chicago 12, Ill.—[ADV. 20]

REBUILT TELEPHONE & SWITCHBOARDS — Telephone Repair & Supply Company, 1760 Lunt Avenue, Chicago 2, Ill.—[ADV. 21]

TRUCK BODIES — Highway Trailer Co., Edgerton, Wisc.—[ADV. 22]

WIRE, Insulated — DATED DROP WIRE — Neoprene or Weatherproof — Alphaduct Wire & Cable Co., Milltown, N. J.—[ADV. 23]

WIRE, Insulated Drop and Bronze or Copperweld — Acorn Insulated Wire Co., Inc., 36 Freeman St., Pawtucket, R. I.—[ADV. 24]

WIRE, Telephone, for all inside and outside uses — Whitney Blake Co., New Haven, Conn.—[ADV. 25]

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HELP WANTED:—Manager wanted for newly organized Ben Lomand Rural Telephone Cooperative, Incorporated, with headquarters in McMinnville, Tennessee. Must have administrative ability to achieve and maintain efficient operations and develop sound expansion programs. Appropriate application form upon receipt of request. Address R. B. Miller, Rock Island, Tenn.

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WANTED: Central Office Equipment Man for new Stromberg XY exchange in Florida. Would be assistant to present C. O. E. man. State age, education, experience, family status, salary expected. Box 8900, Telephone Engineer Publishing Corp., 7720 Sheridan Road, Chicago 26, Illinois.

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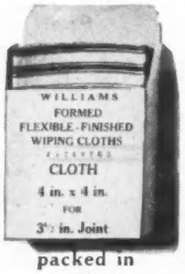

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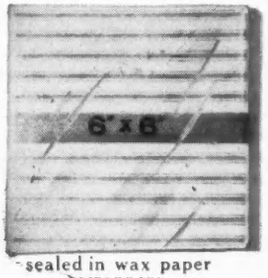

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FEDERAL No. 804A

Magneto Compact set convertible to desk or wall.

Equipped with capsule type transmitter and receiver. Can be used on long rural lines.

PRICE $19.50 EACH

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COMPLETE CENTRAL OFFICE— Available now, 633 line common battery Stromberg-Carlson Universal Super Service Multiple Switchboard, new in 1946. Kellogg Test Cabinet, main frame, relay racks, 320 ampere batteries, chargers, power board, ringing machines, operators chairs. Price upon request. Write Quincy Telephone Company, Quincy, Florida.

FOR SALE — 900 lines, Stromberg common battery equipment, consisting of 6 positions in 3 position sections, rebuilt like new. Storage battery, charging equipment, Leich dual vibrator harmonic converter. Write R. D. Askins, Telephone Service Co. of Ohio, Lima, Ohio.

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#22 gauge coded conductors, waxed cotton insulated, lead covered. On ¼ mile reels (1320')—
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(Continuous 1-Mile Length)

Latest style Signal Corps, Thermoplastic jacket, 2-conductor, twisted pair, (4 copper, 3 steel). Spliced with 3-045B Nicopress Sleeves and sealed with air-tight plastic Sleeves

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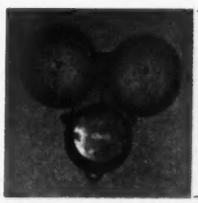
3 Bar. 1000 Ohm. @ $18.00
4 or 5 Bar. 1600 or 2500. @ $20

Prices F.O.B. Chicago, Ill.

INDEPENDENT TELEPHONE REPAIR CO.
2137 W. 21st St., Chicago 8, Ill.



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Chicago 8, Illinois

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IN THE FIELD as in laboratory tests . . . *Crapo* Galvanized Steel Strand proves itself capable of withstanding severe punishment. Steel's inherent strength and durability are combined with definite economies in every size and grade of *Crapo* Steel Strand. You'll find the heavy, ductile, tightly-bonded zinc coatings, applied by the famous *Crapo* Galvanizing Process, provide lasting protection against corrosion.

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OLD-FASHIONED WAYS

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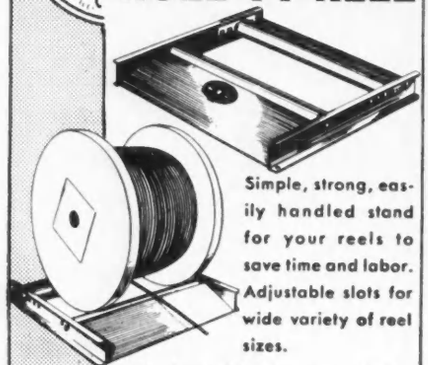

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Free Literature

SALES PRESENTATIONS: — New ways to make sales presentations more interesting and more effective are described in "*Your Best Sales Story Every Time*", a new folder released by *Remington Rand, Inc.*

The suggestions included in the booklet are based on a simple system for organizing the facts, charts, pictures, prices and other data that make up a visual and oral "best sales story." Major advantages of this method are flexibility for quick adaptation of the presentation's contents, including sequence, for any particular territory or type of customer, and split-second reference to information. The sales story is presented completely and is under the salesman's control from beginning to end.

For a free copy request booklet #LL-225 TEM from *Remington Rand Inc.*, 315 *Fourth Ave., New York* 10, *N. Y.*

PRECISION EQUIPMENTS — *Precision Equipment Co.* has published a new catalog featuring Steel Shelving, Lockers as well as other storage and maintenance equipment for industrial and institution use. This new catalog continues to feature, in the tradition of previous Precision catalogs, the work of nationally famous cartoonists. The new catalog also contains the popular joke column entitled, "Heard In The Locker Room", which adds additional sparkle to Precision catalogs. Write *Precision Equipment Co.*, 3712 *N. Milwaukee Ave., Chicago* 41, *Ill.* for your copy.

TRAINING MATERIALS: — The American Society of Training Directors has revised its Catalogue of Training Materials available through its library at Purdue University.

The new catalog contains lists of materials available on Apprentice Training, Clerical, Office Job Training, Company and Product Familiarization Training, Management and other phases of on the job training.

The catalog is now available and copies may be obtained by sending $1.00 to the *Journal of Industrial Training*, 160 *East 48th St., New York* 17, *N. Y.*, or the *Secretary-Treasurer's Office*, 2020 *University Ave., Madison* 5, *Wis.*

HARRY A. MILLER recently joined the Western Light & Telephone Co. as general manager of the Telephone Division. He is located in the company's general administrative office, Great Bend, Kans. Mr. Miller's telephone experience started in his home town of Leavenworth, Kans., where he was employed for three years by the Home Telephone Co. He was with the Kansas City Home Telephone Co. at the time of the physical merger of the Home and Bell Company properties into a single operating plant. Later Mr. Miller was transferred to Wichita, Kans., where he served as district traffic superintendent with Bell for six years. Following that, he was assigned the position of division traffic supervisor, Western Missouri Division, with headquarters in Kansas City; a position he held until joining Western Light & Telephone Co.

Utica (N.Y.) Drop Forge & Tool Corp. has announced the appointment of FRED HALE as advertising manager to replace Henry J. Zellweger who is leaving to go into business on the West Coast. Mr. Hale was previously engaged in Public Relations at Utica College of Syracuse University. He has been active as a free lance advertising writer and as a sports reporter in the newspaper field and has also written for the magazine "Printers' Ink" on direct mail advertising, a field in which he won a national award in 1952. During the war he was in the Marine Corps, First Marine Air Wing, in the Pacific and China theatre.

STROMBERG-CARLSON®

transmitter

Published by the makers of Famous XY® Equipment

VOL. 3, NO. 4 JULY, 1954

Growth is a Habit with California Water & Telephone Company

Chester H. Loveland, President of California Water & Telephone Company. Mr. Loveland is also President of Southwestern States Telephone Company of Brownwood, Texas, and West Coast Telephone Company of Everett, Washington.

Thirty years ago Chester H. Loveland, President of California Water & Telephone Company, made his first move into the operating field of a public utility.

Later in 1927 his engineering firm, Loveland Engineers, a firm engaged in consultation work with telephone, water, gas, electric, and transportation organizations, purchased the Sweetwater Water Company in San Diego County, California. This was the first link in the chain of public utility operations which now forms the California Water & Telephone Company. Other links were added to the chain in rapid succession — the Coronado Water Company, the San Gabriel Valley Water Company, and the Monterey Water Works.

In the telephone field four independent companies were taken over — The Southwestern Home Telephone Company, the Monrovia Telephone & Telegraph Company, the Sierra Madre Telephone & Telegraph Company, and the San Fernando Telephone & Telegraph Company. In 1935 these various operating units were consolidated into a single organization and given the corporate name of California Water & Telephone Company. Today CW&T serves more than half a million Californians and has assets of about forty-five million dollars.

Growth has been a habit with the California Water & Telephone Company since its beginning. For the first six years of the company's existence growth was normal, if one can apply the term "normal" to anything that happens in California, but during the years of World War II the demand for both water and telephone services stepped up extraordinarily and has continued ever since. In the eight years since the war, 1946 through 1953, the number of telephone stations increased from 21,030 to 72,015. Water services jumped from 29,396 to 50,360. Nearly all CW&T properties are located directly in the path of population movement in the nation's fastest growing state.

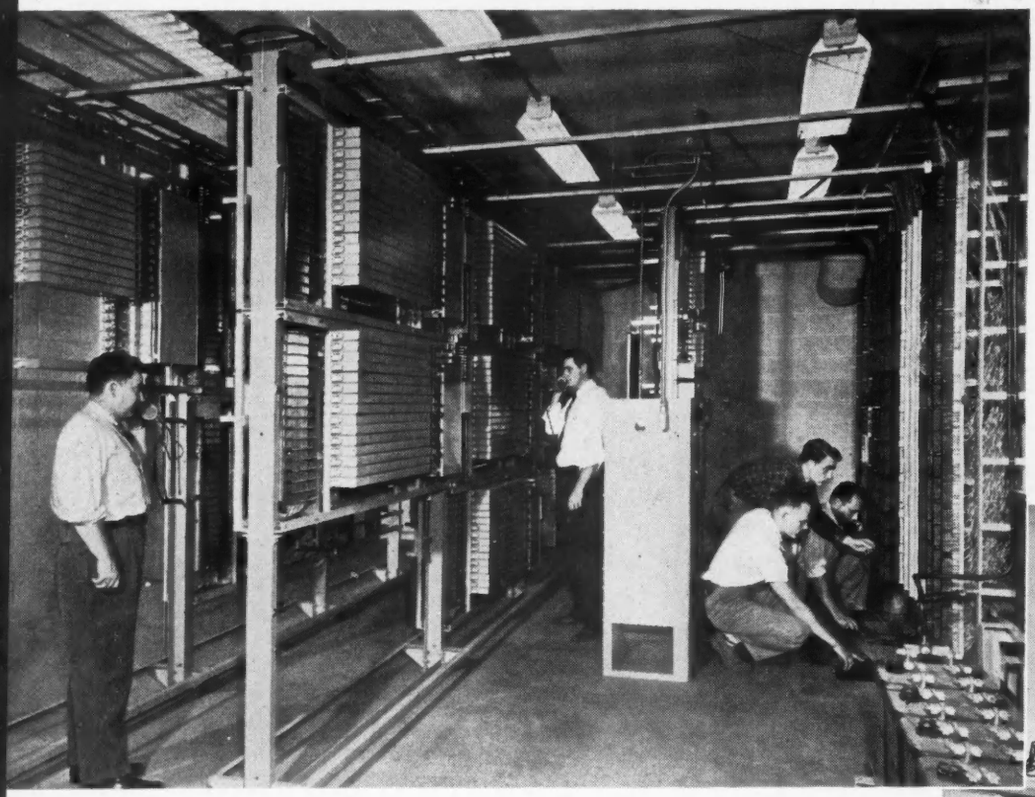
Telephone service is rendered to various communities adjacent to the burgeoning City of Los Angeles, also in San Bernardino County and Riverside County where the fabulous desert resort city of Palm Springs stands at the foot of a 10,000-foot-high mountain peak. Water service is provided by the company to communities on the Monterey Peninsula, an area famous for its invigorating climate, its scenery and championship golf courses, to the residents of the rich residential city of San Marino in Los Angeles County, and to Coronado and the cities of the Sweetwater Valley in San Diego County.

To keep up with the heavy demand for both water and telephone service the company has carried on an extensive program of plant expansion during these last eight years. From the end of 1945 to the end of 1953 about $28,000,000 has been invested in plant facilities — $18,000,000 for the telephone operations and $10,000,000 for the water divisions. The 1954 budget provides another $6,500,000 for construction.

Stromberg-Carlson is proud to have played a part in the expansion program of California Water and Telephone Company and the excellent service it is providing.

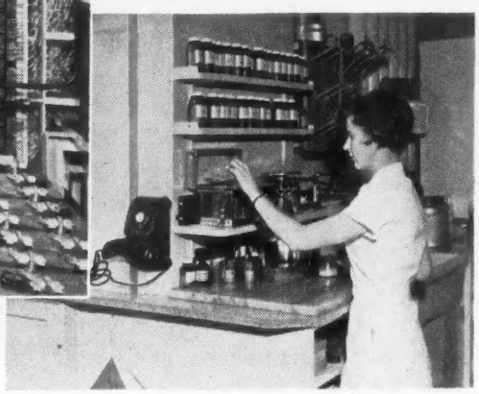
The new Telephone Division office building of California Water & Telephone Company in Monrovia, California.

STROMBERG-CARLSON *transmitter*



TESTING XY equipment prior to cut-over. At left is Rochester Telephone Corp. representative, in center is R. H. Holt, Stromberg-Carlson installation foreman, and Stromberg-Carlson installers are at M.D.F.

WALL PHONE is regular desk phone with alternate hookswitch. It is an important instrument here in the Hospital Pharmacy, where a registered pharmacist makes up one of the 70,000 prescriptions filled annually.



Hospital takes new kind of pulses

New XY System Provides 800 Lifelines for Rochester's Mammoth Medical Center

Anyone wandering through the four miles of corridors in the giant medical center at Rochester, N. Y. quickly realizes why telephones are among its most indispensable life-saving instruments.

Every year 20,000 people are admitted to this center, which consists of Strong Memorial Hospital and the Rochester Municipal Hospital. For each of them, telephones may be used to make room reservations, check records, order drugs from the pharmacy, contact doctors, make X-Ray appointments, and perform scores of other vital, often urgent jobs.

Recognizing their own need for a quick-acting "nerve center" these hospitals recently cut over a new 800-line Stromberg-Carlson XY-PBX dial

system. Many of its 800 stations are equipped with extensions, so that the 1700 doctors, nurses and other employes can perform their duties with as little footwork as possible. Each person is in instant contact by XY dial telephone with every farflung section of the hospitals.

A four-position attendants' cabinet provides a wide range of services. Many of the telephones in the hospital system are restricted to internal calls, while others are nonrestricted. These latter can place outside calls simply by dialing "9", a step which immediately entitles them to one of the 20 trunks in the attendant's cabinet which connect with the Rochester Telephone Corporation central office.

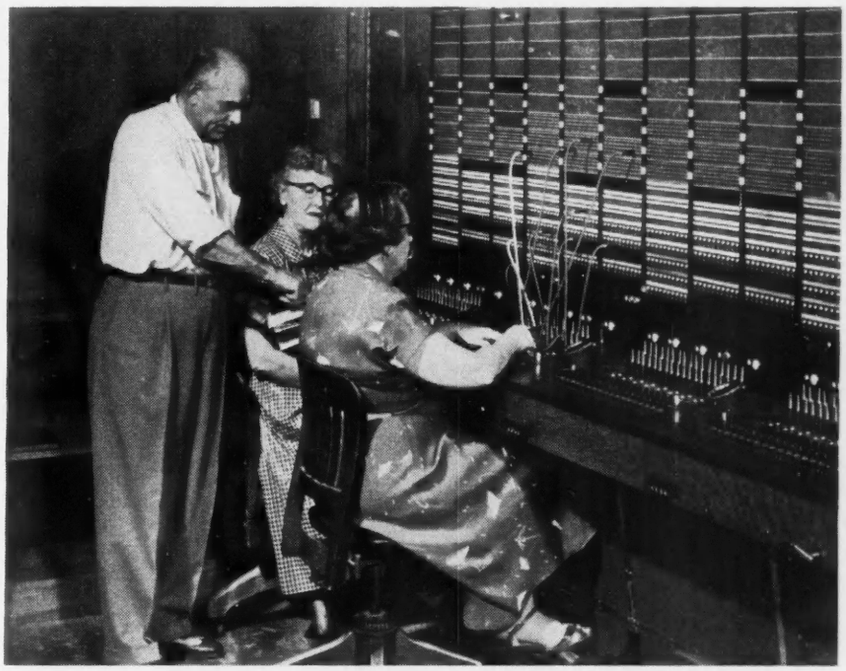
In addition, 30 information trunks are provided, to handle information, and to provide an "outside" connection for restricted telephones, at the operator's discretion.

30 incoming trunks, direct from the Rochester Telephone Corporation central office, are used for receiving "outside" calls. The system is so arranged that *all* calls coming into the medical center must pass through this switchboard.

For the convenience of patients who are unable to use a dial telephone, or others who must place their calls orally, 176 manual lines are also provided. Also, a dead number trunk appears on the attendant's cabinet, providing an easy means to determine when a party dials a nonexistent number and cue-ing the operator to interrupt his call and advise him to consult his directory.

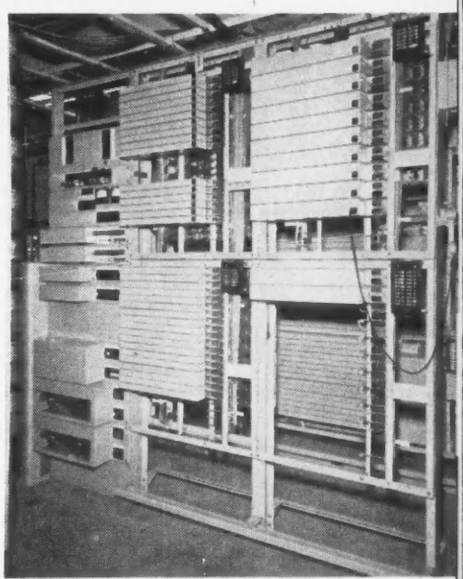
While the new XY System in these hospitals is a vital tool in saving lives, we realize it will never replace any wonder drugs. That sort of progress is in the hands of the capable, foresighted men who are still forging a monument to health out of this already famous medical center (where 6 squalling new citizens are born every day). We are proud that our equipment is playing a part in the daily life of this great hospital.

In short, "the operation is a success".



Michael Trenton, veteran Stromberg-Carlson installation foreman specializing in manual equipment, instructs hospitals' chief operator and her assistant in the function of the 4-position attendants' switchboard. Several new services have been added.

SOCIAL SERVICE department, where outside calls predominate, uses two Stromberg-Carlson Multiple Line Key Turrets to screen and transfer calls, and for message-taking when medical social workers are out of the department.



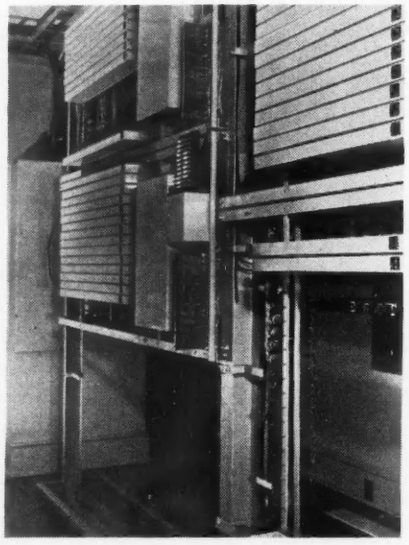
Part of the XY equipment, showing the power board.

NURSES' OFFICE on a floor of the hospital must be in instantaneous telephone contact with other parts of the medical center.

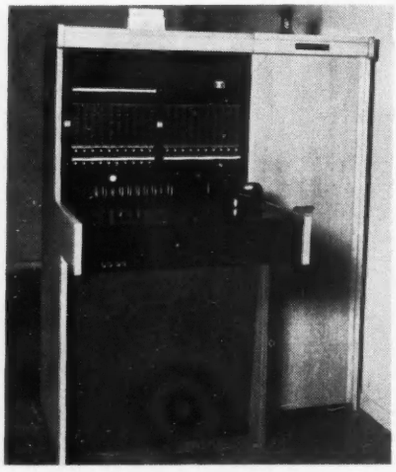
STROMBERG-CARLSON transmitter

XY-PBX Serves Lufkin, Texas, Foundry

The Lufkin Telephone Exchange has recently cut into service a 160-line XY-PBX for use at one of the chief industries of this south-east Texas city — the busy Lufkin Foundry. The need for rapid, economical 24-hour communications within the plant, as well as two-way trunk service to Lufkin's large XY Dial central office led to the selection of the equipment. Dr. L. H. Denman is President of the Lufkin Telephone Exchange; Marion Clay is Manager.



Part of the equipment in this 160-line XY-PBX system.



Smart new switchboard provides two-way trunks between Lufkin Foundry's XY-PBX and the city's XY Dial central office.

Left: Dr. L. H. Denman, president of Lufkin Telephone Exchange. Right: Marion Clay, manager of Lufkin Telephone Exchange.

Two California Towns Welcome XY

At 10:00 p.m., May 14, the Volcano (Calif.) Telephone Company, located in the historic county of Amador, completed another chapter in their success story as they cut their new XY equipment at Pine Grove into service. This office serves the Pine Grove and Volcano areas.

Much of the credit for this progress goes to "Jim" Welch, manager of the company, who stepped into the business a few short years ago with no previous telephone experience. He has not only mastered the art in this short time, but has kept up with the times in furnishing his customers with the most modern type of telephone service now available.

Previously, Jim was employed by the Southern California Edison Company — where he gained valuable experience in electrical circuits.

In his short telephone career, Jim has been fortunate in gaining a fore sighted partner (and brother-in-law), Glen Smith. Between the two of them and their families, they have carried the burden of operating a telephone company in the rugged terrain for which Amador County is famous. The recent cutover to dial is testimony to their efficiency and ability.

The Pine Grove cutover is another example of the giant steps a small telephone company can take, under the leadership of able and energetic men, and with the helping hand of the Stromberg-Carlson Credit Corporation.

Machine Tabulation Cuts Lead Time on Orders

Many operating telephone companies are familiar with tabulating machines as used in billing, accounting and payroll procedures. In a future issue of the Transmitter we will show how one company is presently saving many valuable man hours each month by this method.

This story and the photographs on the facing page illustrate one way Stromberg-Carlson tries to shorten the time between accepting and shipping an order through these amazingly rapid and reliable machines. Let us follow an order for an XY Dial Central Office and associated equipment as it is made ready for this department and processed.

Sales Engineers working in the field have prepared a specification;

Shirley Leschorn uses Collator to merge Schedule Order Cards with Bill of Material Cards.

this will embrace elements common to hundreds of other XY exchanges, but usually combined in a manner which is unique. Thus each job uses Bills of Materials on standard components which may be common to

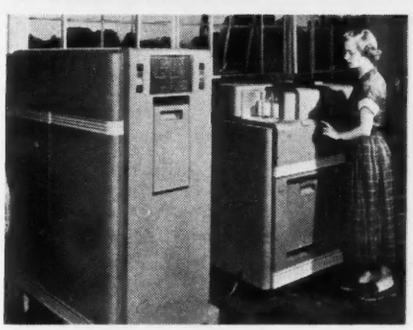
several other jobs running through the factory concurrently. Quantities and assembly will vary and the machines must account for these differences; new Bills of Materials must be created as needed.

Requirement cards are created with scheduled quantities of XY Switches, relays, circuit plates, telephone instruments, etc. as shown on the specification; then an electronic calculator computes and punches into this deck of cards the totals of all parts down to screws, wire and relay springs on the order.

Customers receive the benefit of the next step in the process: machine sorting of the cards by part numbers to bring together like components for economies in manufacturing cost or purchase price. Perpetual inventory reports, also prepared by these machines, reflect up-to-the-minute availability of all components as new requirements are entered and parts move into or are dispersed from, stores.

The 39 people, working 42 machines, have contributed greatly toward meeting the demand for greater production in less time. Of course this is in addition to other regular duties such as payroll, labor distribution, accounts payable, receivables and the like. In the average day from 60-75 orders for tabulating service, received at 4 p. m. are processed and delivered by 3 p. m. of the following day.

Frank Kinsky, standing, Manager of Tabulating Department discusses a new order with (from left) Mark Chafel, Production Engineering; Paul Dornbrock, Inventory Control; Lois Clark, Tabulating Methods Supervisor.



Electronic Calculator, operated by Blossom Spinnell, saves precious man-hours in computing required quantities.

Left to Right — John O'Neill, Production Control Section Supervisor, Shirl Reinhart and Viola Shearer, Staff Assistants, plan scheduling for the week.

Hazel Young runs a Bill of Materials on the Type 402 Accounting Machine.

Rose Harshbarger uses Sorter to sequence cards by stock number.

Requirement cards are reproduced from master deck by Mary Ann Heimes.

Rose Marie Vosburgh creates a deck of punched cards covering a Bill of Materials on a new product.

STROMBERG-CARLSON transmitter

Meet the Sales Engineers of the Kansas City Office

This third article in the biography series of Stromberg-Carlson Sales Engineers takes us to the beehive of activity which is the Kansas City Branch. Arthur B. ("Art") Preble, his travellers and staff cover the telephone needs of a far-flung empire actually larger than the entire Louisiana Purchase. The two men whose stories appear below are known and respected by telephone men from Wyoming to Louisiana, Nebraska to New Mexico.

Myles L. Woolley

Myles Woolley, senior Sales Engineer of the Kansas City Office, has good reason to appreciate the size of this country. His first job was in New York City, testing vacuum tubes in the infancy of radio — days when tubes were made and pumped by hand. World War I saw Myles enlisted in the Navy. Having tried the Eastern seaboard, Myles after his

discharge went to Seattle and the University of Washington. Western Electric Company made him an installer and supervisor of a wiring school for installers and a circuit school for testers. This experience lends emphasis to his recommendations that present customers avail themselves of the facilities of the Stromberg-Carlson XY Training School.

Myles joined the San Francisco office of Stromberg-Carlson in 1938, travelling a huge territory, part of which is now served by his son-in-law, Robert Phelps. You may be sure that when Myles and Mrs. Woolley visit daughter Mary Ellen and their two grandchildren in California, the two men have much in common through their mutual experiences with the same telephone customers.

Before assuming his present post in Kansas City, Myles spent four years in the Rochester home office, working closely with the men who were perfecting the XY Dial System.

William J. Riley

William ("Bill") Riley, second Kansas City Sales Engineer, says that he'll take the heat and dust of the Southwest any day. Here he learned what a barbeque really is, and that southern hospitality is not an expression but a way of life.

Bill found the Army Signal Corps a good place to sharpen talent along the lines of his interest; after discharge he was asked to teach in the Signal Corps School. Bill came to the engineering department of Stromberg-Carlson just in time to assist with the large XY Dial System network centered at Kittanning, Pennsylvania (see Transmitter for January, 1953).

As a National Sales Engineer in Rochester, Bill first became acquainted with many of the managers and

telephone company engineers he now serves in Louisiana, Texas and New Mexico.

Week-ends, as far as possible, are spent at home; both Bill and his wife Thelma love gardening. Marcia, 9, is a Camp Fire Girl; Bill Jr., 8, is a Cub Scout. The whole family likes fishing and the outdoors; in winter it's model railroading.

They're Doing Fine in Kentucky

Garland B. Foscue, Jr., manager of the Consolidated Telephone Co. of Florence, Kentucky, sent us this picture of his fine new building where a large XY System is presently being installed.

Published by Stromberg-Carlson . . . makers of Famous XY Equipment

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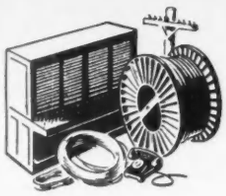

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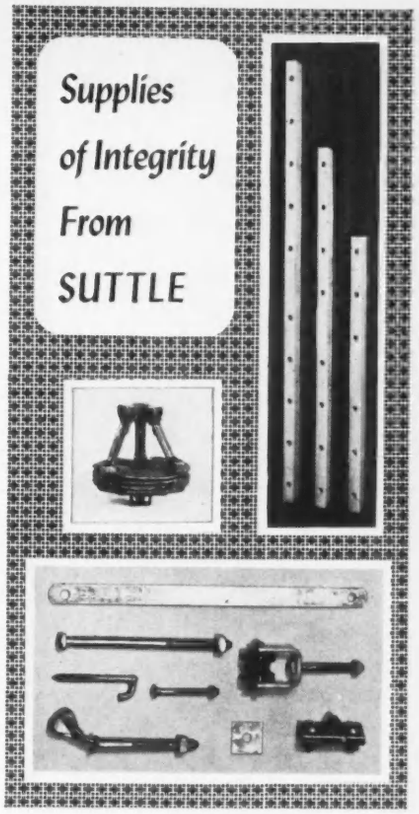

Integrity is a word you attach to people you know will always do the right thing—squarely and honestly, without deviation.

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The Back Of The Book

By JOHN G. REYNOLDS

One-Man Company

OVER IN Ohio, Kent D. Firestone serves the town of Spencer as a one-man utility as he goes about his job as owner of the *Spencer Telephone Co.*

The 48-year old Firestone acquired the company in 1930 when it had 200 customers. Now he has 400. He converted to dial in 1934 and claims it was "one of the first Ohio Independent companies to be converted to the dial."

Besides handling all paper work, Firestone must maintain 58 miles of wire and 34 miles of pole line.

He's never been able to free himself from the 24-hour commitments of being a utility executive long enough to take a vacation, but he hopes to do so once he finishes helping convert a similar nearby system.

New Service In Tokyo

LITTLE ICHIRO in Tokyo now can see Uncle Shozaburo in Nagoya or Auntie Satsumi in Osaka, 280 miles away, when he telephones them. Such service became possible when the telegraph and telephone service recently opened telephone-television service limited to the three cities. So says Associated Press, on whose broad shoulders rests responsibility for correct spelling of Uncle Shozaburo.

"Unexpected Caller"

WHEN THE Chesapeake & Potomac Telephone Co.'s commercial manager in Frederick, Md., decided to inaugurate a new roadside outdoor public telephone booth on a main highway by stopping out-of-state cars at random to find a tourist who would make a free long-distance call to open the booth, he did not expect to bridge years of telephone history.

After occupants of the first several cars which stopped at a nearby traffic light declined the offer of a free call, a woman with two small boys traveling in a station wagon said she would be "most happy to cooperate." She then asked Walt Lanius, Jr., the Commercial Manager, if he knew who she was.

Assured by Mr. Lanius that he did not, she informed him and a Frederick newspaper feature writer who was on hand, "I am Mrs. Walter K. Myers, granddaughter of Alexander Graham Bell, and I would like to call my mother, Mrs. David Fairchild, Mr. Bell's daughter, in Miami."

Verifying Mrs. Myers' identity and the fact that the event was entirely a coincidence, the Baltimore office of the Associated Press gave the story "a lot of mileage."

Devilish Instrument

ERNIE HILL, foreign correspondent for the *Chicago Daily News* recently wrote from London, England, telling about neighbors who had put up their house for sale.

Their ad stated proudly that the house had five fireplaces, three baths, a pond with two swans and no telephone—it never had one.

Which illustrates, according to Mr. Hill, that the telephone, by American standards, has never been a success in England. The late Dowager Queen Mary refused ever "to touch one of the horrid things," and a number of her subjects agreed with her.

Mr. Hill says it is almost impossible, in England, to call someone on the telephone and ask a simple question and get a simple answer. The telephone is merely recognized as a medium to call taxis, place horse bets with bookies and fight with the dry cleaners. Housewives who want to gossip, ignore the telephone and get their news first-hand by "dropping around for tea."

Also, he says, the telephone is so unpopular that the telephone company sends its bills only every six months. People say that if the bills came every month, they would have their telephone taken out—"they are not worth that much trouble."

Mr. Hill quotes a member of the British Parliament who, in discussing wiretapping, recently said:

"We have no use for wiretapping in this country. Hardly anybody uses the telephone. When they do, they never say anything."

"Wrong Number — Right Party"

THE SATURDAY REVIEW reports the weird experience of Robert Cousins, Book Editor for Croft Publications in New London, Conn. Wishing to call Dale Carnegie in New York, Cousins combed his file and found the number on an old letterhead. The operator who handled his call announced that Mr. C. was out of town, but would Mr. Cousins care to speak to Mrs. Carnegie? Cousins said he would.

After the usual pleasantries, Mrs. Carnegie asked, "How on earth did you ever track me down here?" Cousins told her about the old leterhead. "Well," said Mrs. Carnegie, "BOulevard 8-2130 *was* our number, all right, but we discontinued it nine years ago. It was later taken over by a beauty shop in Forest Hills — and that's where I'm having my hair washed right now!"

Atomic "Gobbledygook"

WE DON'T KNOW WHY, but telephone people may be interested to know the Atomic Energy Commission finally has released for public use the patent on making thermo-plastic halocarbon polymers comprising copolymerizing tetrafluroethylene and trifluoromonochloroethylene in the presence of tricholoroacetyl peroxide as a polymerization promoter. Same is true for polytrifluorochloroethylene.

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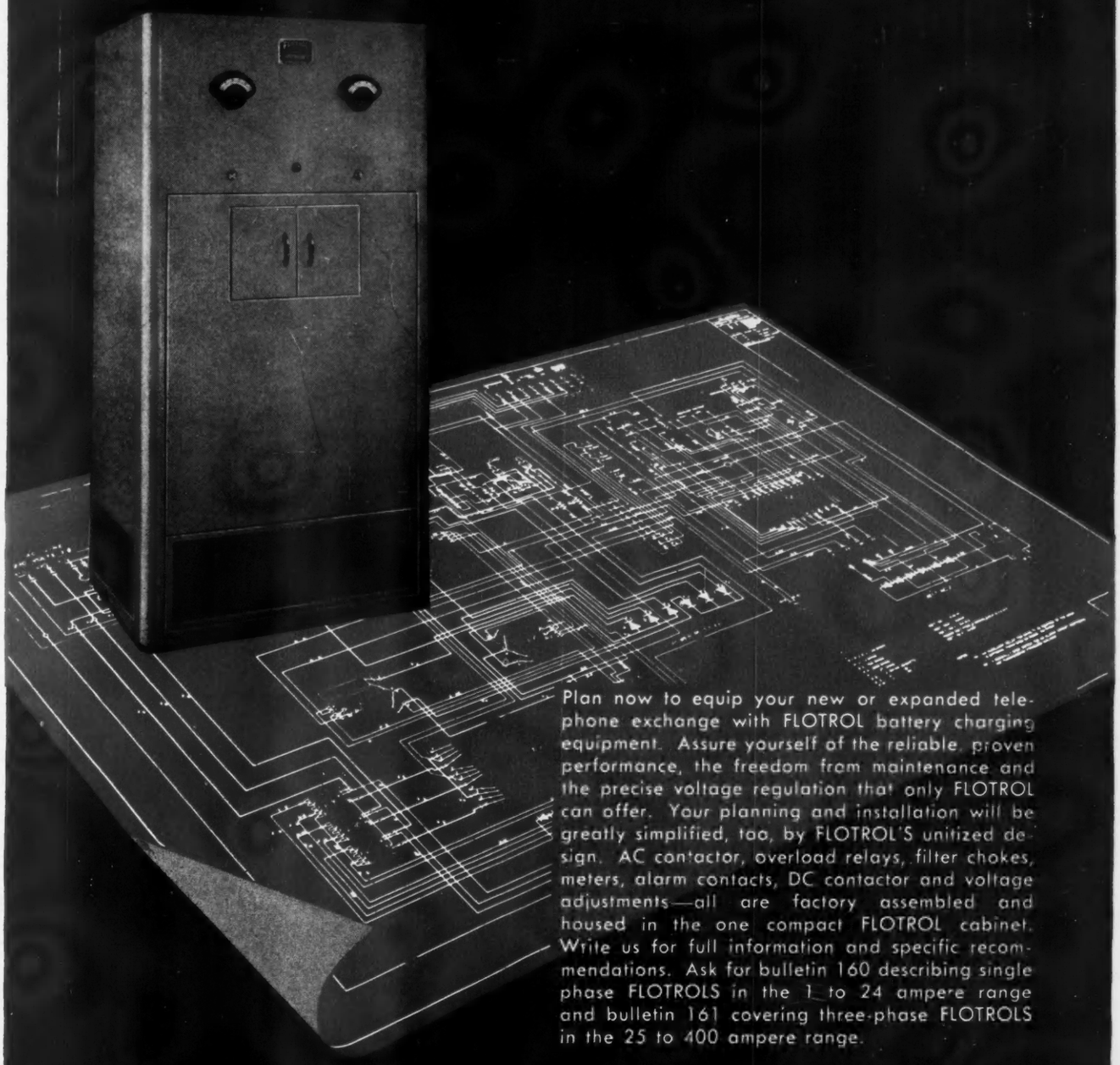

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